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MINISTRY OF THE ENVIRONMENT
AIR RESOURCES BRANCH
ATMOSPHERIC RESEARCH AND SPECIAL PROGRAM SECTION
MONITORING AND INSTRUMENTATION DEVELOPMENT UNIT

SARNIA OXIDANT STUDY

June and July, 1984
GAS CHROMATOGRAPHIC DATA

ARB-022-85-ARSP

880 Bay Street
Toronto, Ontario

TD
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1984
MOE

December 1984

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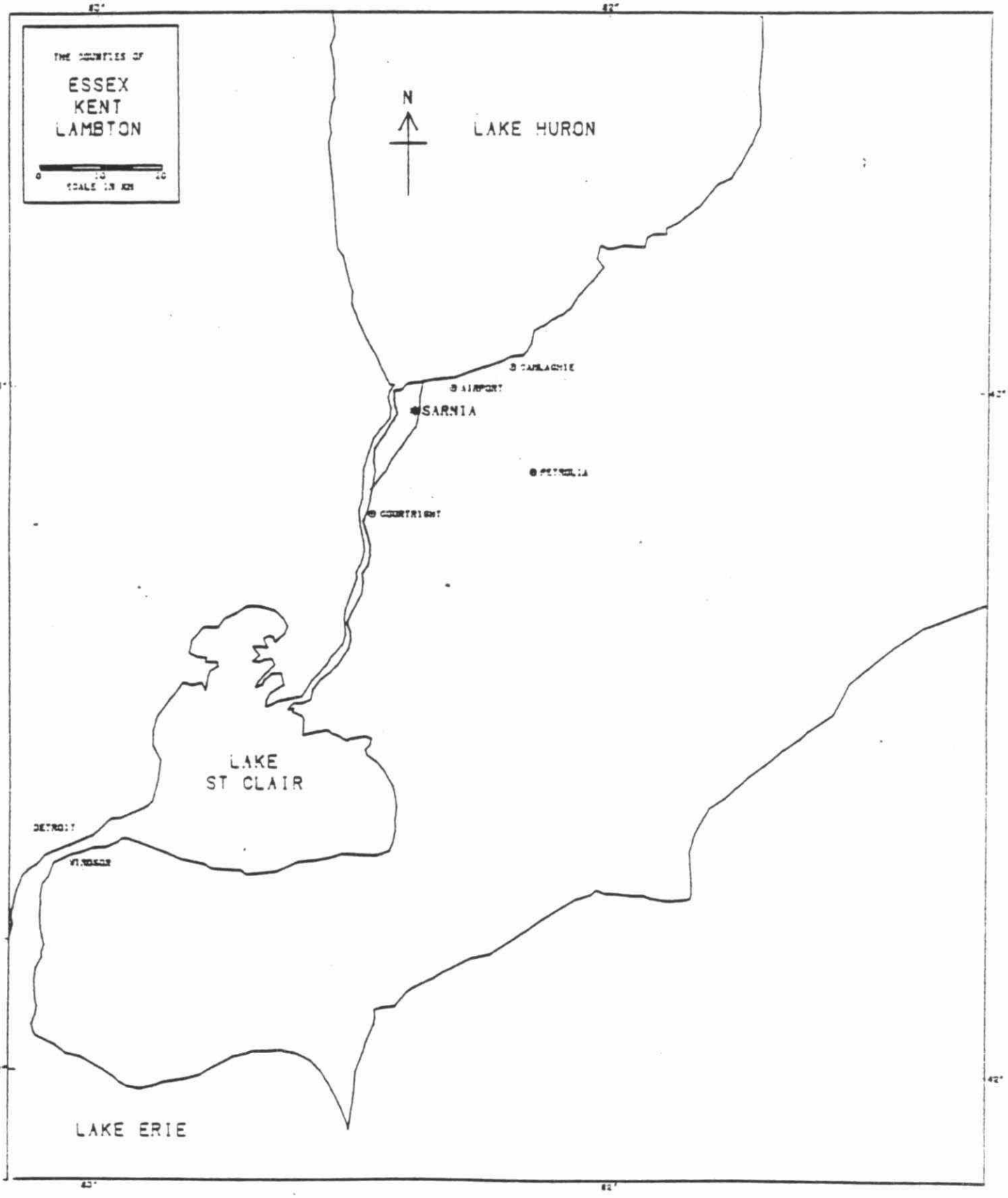
Figure #1

SARNIA OXIDANT STUDY - June and July, 1984

MONITORING SITES



Mobile Air Monitoring Unit #1 at Camlachie

Mobile Air Monitoring Unit #1 (MAMU #1) was positioned at the Canadian Coast Guard Radio Communications site located approximately 3 km west of Camlachie and noted by the Universal Transverse Mercator grid co-ordinates: 40338 - 476445. Camlachie is a small agricultural town located approximately 20 km east of Sarnia and 3 km south of Lake Huron.

The Camlachie Coast Guard site is owned by the Federal Government of Canada and is an automatic radio station that is used to co-ordinate marine traffic on the Great Lakes and nearby waterways. The Federal Government maintains three radio towers at this site and all of the electronics are kept in a brick building at the base of the largest tower. Approximately 50 metres north of this building is a two-car garage.

Upon arrival at this site, the garage was given a thorough cleaning and storage facilities for all the gases and spare electronics were arranged. The ozone precursor (from the Environmental Protection Agency - USA) and the upper air minisonde/theodolite programmes originatd from this building.

Mobile Air Monitoring Unit #1 set up on the U-shape road interconnecting the main building and the garage and was positioned approximately 35 metres east of the garage and 55 metres north of the main building. Ontario Hydro supplied power to the MAMU #1 and the unit was brought on line June 21.

MAMU #1 gathered real-time, five minute average ground level concentrations of ambient air data for carbon monoxide, total hydrocarbons and the methane component, sulphur dioxide, oxides of nitrogen and ozone. MAMU #1 also acquired data from the ozone precursor instrument which was scanned/cycled every fifteen minutes. The gathering of this aforementioned data was essentially continuous and was carried on

thoughout this survey. In addition, the specific analysis for hydrocarbons was also carried by an on-board dual-column gas chromatograph (GC). This gas chromatograph analyzed 34 plane samples (although 37 were submitted, 2 were found to be contaminated before analysis) of the air aloft, 65 one-hour samples of the air at ground level (5 metre height) and 6 grab samples from the Vidal Street area of Sarnia. It should be stated here that all samples continuously acquired by MAMU #1, (including the 65 one-hour GC samples) were acquired through an inlet sampling port located 5 metres above ground level and it was a dynamic system with inherent turblent mixing. MAMU #1 also acquired, on a continuous basis throughout the entire survey, data on a complete range of meteorological parameters such as solar radiation, humidity, temperature, barometric pressure (at MSL) and wind speed and direction (from atop a 10 metre tower). These data, apart from the GC data, collected by MAMU #1 are given in Ontario Ministry of the Environment Report ARB-021-85-ARSP.

The lower 2 km of the atmosphere was interrogated for temperature and winds by a stand-alone dual theodolite/minisonde programme. Approximatly 66 soundings were carried out over this survey period. The double theodolie baselines were established and were approximately 300 metres apart for these soundings.

Ambient air monitoring was carried out at this site between June 21, 1984 at 10:10 hrs EDT and July 18, 1984 at 13:45 hrs EDT. From the 651.8 hours comprising the survey period, 594.2 hours (or 91% of the time) of data were acquired. The remaining 9% of the time was lost due to power failures, instrument calibrations and instrument modifications.

Mobile Air Montoring Units #2 and #3 at Courtright

The Courtright site utilized for this survey was a permanent Ministry of the Environment air monitoring site located approximately 20 km south of Sarnia and at the southern edge of the refinery installations. This site is on the east side of the St. Clair River and is noted by the Universal Transverse Mercator grid co-ordinates 37925 - 473945 and has an elevation of 177 metres above mean sea level. The MAMU's were

parked near the centre of the flat trianglar-shaped enclosure (100 metres per side) comprising this installation. This site was approximately 660 metres north of a marine terminal operated by Ontartio Hydro to supply its Lambton generating station. In addition to this Ontario Hydro facility as a potential source of nitrogen oxides (NO_x) and hydrocarbons, there were two other nearby power generating stations on the U.S side (west side) of the St. Clair River and a high frequency of lake freighter traffic on this river. Shoreline power was supplied by Ontario Hydro, thus the MAMU generator emissions were never a factor during this survey.

The MAMU's were positioned on opposite sides of the 15 foot square building which housed a fixed air monitoring station operated by MOE. MAMU #2 gathered five-minute average ambient air data for carbon monoxide, total reduced sulphur, total hydrocarbons and the methane component. Sulphur dioxide, oxides of nitrogen, ozone, wind speed and direction at the 10 metre level, temperature, barometric pressure, relative humidity and solar radiation. Data collected by MAMU #2 are given in Ontario Ministry of the Environment Report ARB-021-85-ARSP.

Additional data were gathered by the data acquisition system of MAMU #2 from an ozone precursor monitor located in a 15 foot trailer at this site and from meteorological instruments for wind speed/direction and temperature located at the 100 metre level on the permanent MOE tower.

MAMU #2 started gathering data from June 23 to July 19 and from the 621 hours comprising this time period, 596 hours (or 96% of the time) of data were accumulated.

MMAU #3 also gathered data for this same period, however, its main time frame of interest was when the aircarft was flying in its prescribed routes. The objective of the MAMu #3 (TAGA) monitoring programmed was to acquire ambient air data for a pre-selected number of oxygenated organic compounds which were not currently observable by the gas chromatographic techniques of MAMU #1 and #2. Compounds

monitored by the TAGA were all low molecular weight aldehydes, ketones, acetates and alchols (in all 16 different compounds).

Prior to each monitoring period, the TAGA was calibrated with the appropriate standard. Also, all ambient air data was "background" corrected using an UP zero air and water mixture. (This was to account for any chemical or electrical noise inherent in the source and signal handling electronics).

Unlike other ambient air surveys involving well defined source(s), the Sarnia Oxidant Study involved general ambient air quality investigation and thus absolute confirmation of the target compounds was not possible. It follows, that all TAGA concentration data represents the maximum level or upper limits, since it is likely that, interferences, i.e. chemicals with the same molecular weight (nominal) as the target compound, may have been co-sampled. For a tabulation of the TAGA data collected during this Sarnia Oxidant Study, see Ontario Ministry of the Environment report ARB-021-85-ARSP.

Aircraft Samples

The aircraft samples were collected in evacuated stainless steel flasks (purchased from Biostatic Research, Hillsboro, Oregon) over 15 or 30 minute intervals, depending on the flight traverse. Calibrated orifices were used to control the flow rate. The air samples were conducted to the flasks through a ¼ in. stainless steel sample line, which projected outside of the aircraft and was thoroughly flushed each time before opening the flasks. Sample analyses was carried out within about three hours of flight termination. Appendix A gives details on the sampler operation.

GAS CHROMATOGRAPHIC METHOD AND RESULTS

Thirty-four samples collected on the aircraft, 65 one-hour samples from Camlachie, 72 one-hour samples from Courtright and 6 grab samples from the Vidal Street area of Sarnia consituted the gas chromatographic work for this survey.

Dual capillary column analysis was performed for each air sample on one of two Hewlett Packard 5880A Gas Chromatographs equipped with a Trace Organic Preconcentrator ... i.e., one system at Camlachie and one at Courtright. For each gas chromatograph (GC), there was a computer library containing approximately 120 organic compounds. These libraries contained retention indices and relative response factors (based on hexane) for each of the compounds and were specific for each of the two columns associated with each gas chromatograph.

Each day, a calibration mixture of n-hydrocarbons was injected into each gas chromatograph. The retention times for these compounds were used as references from which rentention indices of unknown peaks in the chromatographs of the air samples were calculated.

For each analysis, a computer program calculated the rentention index for every peak in both chromatograms and a comparison was made with the library values. An Indentification Report was printed for each column. If the retention index for a peak, as eluted on a specific column, fell within a retention index window specified for a library entry, the organic compound was indentified and the calculated amount was printed in the Indentification Report. A final Confirmation Report, resulting from the correlation of the analysis from the two chromatograms, was printed giving the name of each compound identified in both chromatogram (compounds indentified on only one column were eliminated) and the best value for the amount of each compound. A complete listing of the reports for all the analyses is included in a separate appendix and will be available on request.

The analytical results are summarized in table form for all the air samples anlayzed during this survey. The study, sample type, date acquired and sampling times for each analysis are listed across the top of the table. All times are local (Eastern Daylight) time. If the compound was detected on both columns for a given analysis, then the amount for that compound is stated (the units are micrograms per cubic metre ug/m^3). No amount is stated for a compound if that compound was found only on one column or if it was not detected on either column. A further summary of each analysis is given at the bottom of the table for the particular time period sampled. The most important of these summary entries are the amounts of the total hydrocarbons indentified (ug/m^3), a

summary breakdown of the total into eight subgroups, the total number of peaks indentified and the percentage of the total area credited to the indentified peaks. Certain ratioed amounts of specific organic compounds are also presented and these ratioed amounts will be used for future studies as to source delineations.

Apart from the specific site samples (i.e., the Camlachie, Courtright and Airplane samples), a special note should be made with respect to the grap samples. These samples were taken during the early part of the survey in order that an initial screening or representative chromatogram could be established for the Sarnia plume (samples #1,2,4 and 5 reflect this endeavour). In addition, site source contamination was also investigated for Camlachie (sample #3) and the airplane hanger (sample #6).

N.B. The analytical interpretation and presentation of the acquired data are qualified by the following points:

- The benzene amounts for the Camlachie, airplane and grab samples are of questionable validity due to inherent benzene contamination of the GC system. The measured benzene is a composite of the acutal ambient benzene plus system contamination and the prevelent fact here, is that this contamination component is variable and often significant.

- The amount data for the various organics are reported to a precision of 0.01 ug/m^3. In reality, the accuracy is only valid ot 0.1 ug/m^3 - reason: formatting constraint by the computer spread-sheet software.

Lastly, in this section, a three-page tabulation is given for the minimal detectable limits for each organic compound and their corresponding (if one exists) guideline, tentative guideline, standard, criteria, etc. concentration values.... benchmarks.

The location of the samples collected during the aircarft flights are given in Ontario Ministry of the Environment Report ARB-019-85-ARSP.

RB/mb/AR46-12

SARNIA OXIDANT STUDY - June and July, 1981

GAS CHROMATOGRAPHIC DATA.....Camlachie Ambient Air Data

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
units ug/m3 DATE: June 26/84

TIME PERIOD

COMPOUND NAME	1115-1207	1207-1307
PROPANE	35.74	21.24
PROPADIENE		
PROPYNE		
CHLOROMETHANE		0.94
CYCLOPROPANE		
ISOBUTANE		11.08
VINYL CHLORIDE		
1-BUTENE		0.53
1,3-BUTADIENE		
BUTANE	24.84	22.72
1-BUTYNE		
CHLOROETHANE		
3-METHYL-1-BUTENE		
2-METHYLBUTANE	26.19	13.55
1-PENTENE		
PENTANE	12.58	6.03
ISOPRENE		
TRANS-2-PENTENE	0.59	
DICHLOROMETHANE		
2-METHYL-2-BUTENE		
2-CHLORO-2-METHYLBUTANE		
3-CHLOROPROPENE		
2,2-DIMETHYLBUTANE	0.82	
3-METHYL-1-PENTENE		
2,3-DIMETHYLBUTANE	1.26	0.73
3-METHYLPENTANE	3.62	1.35
1-HEXENE		
CIS-1,2-DICHLOROETHYLENE		
2-CHLOROBUTANE		
HEXANE	10.93	3.11
CHLOROFORM		
TRANS-3-HEXENE		
3-CHLORO-2-METHYLPROPENE		
METYHYLCYCLOPENTANE	3.55	1.04
1,2-DICHLOROETHANE	1.38	
1,1,1-TRICHLOROETHANE		
1-CHLOROBUTANE		
BENZENE	16.19	18.53
CARBON TETRACHLORIDE		
CYCLOHEXANE		4.59
2-METHYLHEXANE	6.48	3.05
2,3-DIMETHYLPENTANE		
CYCLOHEXENE		
DIBROMOMETHANE		
3-METHYLHEXANE	5.08	2.41
1,2-DICHLOROPROPANE		
2,3-DICHLOROPROPANE		
TRICHLOROETHYLENE	1.12	
2,2,4-TRIMETHYLPENTANE	2.22	1.74
1-HEPTENE		
HEPTANE	2.60	1.33
1-CHLORO-3-METHYLBUTANE		
TRANS-2-HEPTENE		

METHYLCYCLOHEXANE		0.72
2,5-DIMETHYLHEXANE	0.75	
4-METHYLCYCLOHEXENE		
1-CHLOROPENTANE		
1,1,2-TRICHLOROETHANE		
TOLUENE	12.53	9.13
1,3-DICHLOROPROPANE		
2-METHYLHEPTANE		
1,2-DIBROMOETHANE		
1-OCTENE		
TRANS1,2DIMETHYLCYLOHEXANE		
TRANS-4-OCTENE		
TETRACHLOROETHYLENE		
OCTANE	1.18	0.68
2-METHYL-1-HEPTENE		
2-OCTENE		
CIS-1,2-DIMETHYLCYCLOHEXANE		
CHLOROBENZENE		
PROPYLCYCLOPENTANE		
ETHYLCYCLOHEXANE		
1-CHLOROHEXANE		
ETHYLBENZENE	3.16	1.13
M-XYLENE	2.97	1.43
STYRENE		
1,4-DICHLOROBUTANE		
O-XYLENE	1.11	0.52
1,1,2,2-TETRACHLOROETHANE		
1,2,3-TRICHLOROPROPANE		
1-NONENE		
NONANE	0.76	0.67
ISOPROPYLBENZENE		
2-CHLOROTOLUENE		
3-CHLOROTOLUENE		
N-PROPYLBENZENE		
4-CHLOROTOLUENE		
3-ETHYLTOLUENE		
4-ETHYLTOLUENE		
1,3,5-TRIMETHYLBENZENE		
2-ETHYLTOLUENE		
T-BUTYLBENZENE		
1,2,4-TRIMETHYLBENZENE		
1,3-DICHLOROBENZENE		
1-DECENE		
A-CHLOROTOLUENE		
1,5-DICHLOROPENTANE		
DECANE	1.30	2.50
SEC.BUTYLBENZENE		
3-(CHLOROMETHYL)-HEPTANE		
1,2,3-TRIMETHYLBENZENE		
1-ISOPROPYL-4-METHYLBENZENE		
1,2-DICHLOROBENZENE		
INDAN		
N-BUTYLCYCLOHEXANE		
1,3-DIETHYLBENZENE		
1,4-DIETHYLBENZENE		
N-BUTYLBENZENE		
1,2-DIETHYLBENZENE		
DECALIN		
UNDECANE		
1,2,3,5-TETRAMETHYLBENZENE		
DIISOPROPYLBENZENE		
1,2,3,4-TETRAMETHYLBENZENE		
TETRALIN		
DODECANE	10.82	16.06

Total hydrocarbons ug/m3:	189.77	146.81
Alkanes ug/m3	147.17	108.25
Cycloalkanes ug/m3	3.55	6.35
Alkenes ug/m3	0.59	0.53
Cycloalkenes ug/m3	0.00	0.00
Alkynes ug/m3	0.00	0.00
Aromatics ug/m3	35.96	30.74
Chlorinated alkanes ug/m3	1.38	0.94
Chlorinated alkenes ug/m3	1.12	0.00
Chlorinated aromatics ug/m3	0.00	0.00
Total # of compounds identified	26	26
Total # of peaks	48	40
Total area of peaks	9418.00	6992.81
Area of identified peaks	7537.00	6075.81
Area % identified peaks	80	87
Toluene:Ethylbenzene	3.97	8.08
Benzene:Ethylbenzene	5.12	16.40
Xylenes:Ethylbenzene	1.29	1.73
Ethylbenzene:Ethylbenzene	1.00	1.00

N

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION: Camlachie
DATE: June 28/84

units ug/m3

COMPOUND NAME	TIME PERIOD 1311-1409	1409-1509	1509-1609
PROPANE			
PROPADIENE			
PROPYNE			
CHLOROMETHANE			
CYCLOPROPANE			
ISOBUTANE			
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE	1.98		2.82
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE			
1-PENTENE			
PENTANE	0.42		
ISOPRENE			
TRANS-2-PENTENE			
DICHLOROMETHANE			
2-METHYL-2-BUTENE			
2-CHLORO-2-METHYLBUTANE			
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE			
3-METHYL-1-PENTENE			
2,3-DIMETHYLBUTANE			
3-METHYLPENTANE			
1-HEXENE			
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE			
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE			
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1-CHLOROBUTANE			
BENZENE	3.05	1.76	2.80
CARBON TETRACHLORIDE			
CYCLOHEXANE			
2-METHYLHEXANE			
2,3-DIMETHYLPENTANE			
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE			
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			
2,2,4-TRIMETHYLPENTANE			
1-HEPTENE			
HEPTANE			
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			

METHYLCYCLOHEXANE	
2,5-DIMETHYLHEXANE	
4-METHYLCYCLOHEXENE	
1-CHLOROPENTANE	
1,1,2-TRICHLOROETHANE	
TOLUENE	
1,3-DICHLOROPROPANE	
2-METHYLHEPTANE	
1,2-DIBROMOETHANE	
1-OCTENE	
TRANS1,2DIMETHYLCYLOHEXANE	
TRANS-4-OCTENE	
TETRACHLOROETHYLENE	
OCTANE	
2-METHYL-1-HEPTENE	
2-OCTENE	
CIS-1,2-DIMETHYLCYCLOHEXANE	
CHLOROBENZENE	
PROPYLCYCLOPENTANE	
ETHYLCYCLOHEXANE	
1-CHLOROHEXANE	
ETHYLBENZENE	
M-XYLENE	
STYRENE	
1,4-DICHLOROBUTANE	
O-XYLENE	0.48
1,1,2,2-TETRACHLOROETHANE	
1,2,3-TRICHLOROPROPANE	
1-NONENE	
NONANE	
ISOPROPYLBENZENE	
2-CHLOROTOLUENE	
3-CHLOROTOLUENE	
N-PROPYLBENZENE	
4-CHLOROTOLUENE	
3-ETHYLTOLUENE	
4-ETHYLTOLUENE	
1,3,5-TRIMETHYLBENZENE	
2-ETHYLTOLUENE	
T-BUTYLBENZENE	
1,2,4-TRIMETHYLBENZENE	
1,3-DICHLOROBENZENE	
1-DECENE	
A-CHLOROTOLUENE	
1,5-DICHLOROPENTANE	
DECANE	
SEC.BUTYLBENZENE	
3-(CHLOROMETHYL)-HEPTANE	
1,2,3-TRIMETHYLBENZENE	
1-ISOPROPYL-4-METHYLBENZENE	
1,2-DICHLOROBENZENE	
INDAN	
N-BUTYLCYCLOHEXANE	
1,3-DIETHYLBENZENE	
1,4-DIETHYLBENZENE	
N-BUTYLBENZENE	
1,2-DIETHYLBENZENE	
DECALIN	
UNDECANE	1.93
1,2,3,5-TETRAMETHYLBENZENE	
DIISOPROPYLBENZENE	
1,2,3,4-TETRAMETHYLBENZENE	
TETRALIN	
DODECANE	3.35

Total hydrocarbons ug/m3:	11.21	1.76	5.62
Alkanes ug/m3	7.68	0.00	2.82
Cycloalkanes ug/m3	0.00	0.00	0.00
Alkenes ug/m3	0.00	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00
Aromatics ug/m3	3.53	1.76	2.80
Chlorinated alkanes ug/m3	0.00	0.00	0.00
Chlorinated alkenes ug/m3	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00
Total # of compounds identified	6	1	2
Total # of peaks	15	8	8
Total area of peaks	924.78	339.98	741.34
Area of identified peaks	343.09	96.54	270.42
Area % identified peaks	37	28	36

Toluene:Ethylbenzene

Benzene:Ethylbenzene

Xylenes:Ethylbenzene

Ethylbenzene:Ethylbenzene

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
units ug/m3 DATE: June 29/84

TIME PERIOD

COMPOUND NAME	1118-1218
PROPANE	
PROPADIENE	
PROPYNE	
CHLOROMETHANE	
CYCLOPROPANE	
ISOBUTANE	
VINYL CHLORIDE	
1-BUTENE	
1,3-BUTADIENE	
BUTANE	
1-BUTYNE	
CHLOROETHANE	
3-METHYL-1-BUTENE	
2-METHYLBUTANE	
1-PENTENE	
PENTANE	
ISOPRENE	
TRANS-2-PENTENE	
DICHLOROMETHANE	
2-METHYL-2-BUTENE	
2-CHLORO-2-METHYLBUTANE	
3-CHLOROPROPENE	
2,2-DIMETHYLBUTANE	
3-METHYL-1-PENTENE	
2,3-DIMETHYLBUTANE	
3-METHYLPENTANE	
1-HEXENE	
CIS-1,2-DICHLOROETHYLENE	
2-CHLOROBUTANE	
HEXANE	
CHLOROFORM	
TRANS-3-HEXENE	
3-CHLORO-2-METHYLPROPENE	
METYHYLCYCLOPENTANE	
1,2-DICHLOROETHANE	
1,1,1-TRICHLOROETHANE	
1-CHLOROBUTANE	
BENZENE	2.20
CARBON TETRACHLORIDE	
CYCLOHEXANE	
2-METHYLHEXANE	
2,3-DIMETHYLPENTANE	
CYCLOHEXENE	
DIBROMOMETHANE	
3-METHYLHEXANE	
1,2-DICHLOROPROPANE	
2,3-DICHLOROPROPANE	
TRICHLOROETHYLENE	
2,2,4-TRIMETHYLPENTANE	
1-HEPTENE	
HEPTANE	
1-CHLORO-3-METHYLBUTANE	

TRANS-2-HEPTENE
METHYLCYCLOHEXANE
2,5-DIMETHYLHEXANE
4-METHYLCYCLOHEXENE
1-CHLOROPENTANE
1,1,2-TRICHLOROETHANE
TOLUENE
1,3-DICHLOROPROPANE
2-METHYLHEPTANE
1,2-DIBROMOETHANE
1-OCTENE
TRANS1,2DIMETHYLCYLOHEXANE
TRANS-4-OCTENE
TETRACHLOROETHYLENE
OCTANE
2-METHYL-1-HEPTENE
2-OCTENE
CIS-1,2-DIMETHYLCYCLOHEXANE
CHLOROBENZENE
PROPYLCYCLOPENTANE
ETHYLCYCLOHEXANE
1-CHLOROHEXANE
ETHYLBENZENE
M-XYLENE
STYRENE
1,4-DICHLOROBUTANE
O-XYLENE
1,1,2,2-TETRACHLOROETHANE
1,2,3-TRICHLOROPROPANE
1-NONENE
NONANE
ISOPROPYLBENZENE
2-CHLOROTOLUENE
3-CHLOROTOLUENE
N-PROPYLBENZENE
4-CHLOROTOLUENE
3-ETHYLTOLUENE
4-ETHYLTOLUENE
1,3,5-TRIMETHYLBENZENE
2-ETHYLTOLUENE
T-BUTYLBENZENE
1,2,4-TRIMETHYLBENZENE
1,3-DICHLOROBENZENE
1-DECENE
4-CHLOROTOLUENE
1,5-DICHLOROPENTANE
DECANE
SEC.BUTYLBENZENE
3-(CHLOROMETHYL)-HEPTANE
1,2,3-TRIMETHYLBENZENE
1-ISOPROPYL-4-METHYLBENZENE
1,2-DICHLOROBENZENE
INDAN
N-BUTYLCYCLOHEXANE
1,3-DIETHYLBENZENE
1,4-DIETHYLBENZENE
N-BUTYLBENZENE
1,2-DIETHYLBENZENE
DECALIN
UNDECANE
1,2,3,5-TETRAMETHYLBENZENE
DIISOPROPYLBENZENE
1,2,3,4-TETRAMETHYLBENZENE
TETRALIN
DODECANE

Total hydrocarbons ug/m3:	2.20
Alkanes ug/m3	0.00
Cycloalkanes ug/m3	0.00
Alkenes ug/m3	0.00
Cycloalkenes ug/m3	0.00
Alkynes ug/m3	0.00
Aromatics ug/m3	2.20
Chlorinated alkanes ug/m3	0.00
Chlorinated alkenes ug/m3	0.00
Chlorinated aromatics ug/m3	0.00
Total # of compounds identified	1
Total # of peaks	4
Total area of peaks	382.15
Area of identified peaks	123.08
Area % identified peaks	32

Toluene:Ethylbenzene

Benzene:Ethylbenzene

Xylenes:Ethylbenzene

Ethylbenzene:Ethylbenzene

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION: Caalachie
units ug/m3 DATE: JULY 3/84

TIME PERIOD

COMPOUND NAME	0925-1017	1017-1117	1117-1217	1217-1317	1317-1417	1417-1517
PROPANE			32.83		0.18	
PROPADIENE						
PROPYNE						
CHLOROMETHANE			2.19			
CYCLOPROPANE						
ISOBUTANE			18.48		0.95	
VINYL CHLORIDE						
1-BUTENE						
1,3-BUTADIENE						
BUTANE	9.08	0.92	31.55	3.66	0.01	
1-BUTYNE					6.69	
CHLOROETHANE			2.10			
3-METHYL-1-BUTENE						
2-METHYLBUTANE	21.24	3.63	28.90	7.26	11.90	0.59
1-PENTENE						
PENTANE	7.02	3.08	10.51	4.16	4.80	1.30
ISOPRENE	0.47		0.74	0.22	0.21	
TRANS-2-PENTENE	0.40		0.46	0.40	0.37	
DICHLOROMETHANE			1.11	1.24	1.78	0.77
2-METHYL-2-BUTENE			0.40			
2-CHLORO-2-METHYLBUTANE						
3-CHLOROPROPENE			0.25			
2,2-DIMETHYLBUTANE	0.37	0.41	0.48	0.27	0.30	0.18
3-METHYL-1-PENTENE						
2,3-DIMETHYLBUTANE	0.77	1.47	0.78	0.63	0.80	0.45
3-METHYLPENTANE	3.23	4.21	2.43	1.35	1.27	1.19
1-HEXENE		0.23	0.20	0.10		
CIS-1,2-DICHLOROETHYLENE						
2-CHLOROBUTANE						
HEXANE	8.44	14.83	5.48	2.29	1.93	1.99
CHLOROFORM						
TRANS-3-HEXENE						
3-CHLORO-2-METHYLPROPENE						
METYHYLCYCLOPENTANE	2.50	4.89	1.72	0.99	0.87	0.65
1,2-DICHLOROETHANE		1.10	0.96			
1,1,1-TRICHLOROETHANE						
1-CHLOROBUTANE						
BENZENE	12.86	14.77	16.41	4.86	8.14	3.90
CARBON TETRACHLORIDE						
CYCLOHEXANE				3.19		
2-METHYLHEXANE	6.41	11.87	3.74	2.50	2.35	2.61
2,3-DIMETHYLPENTANE						
CYCLOHEXENE			0.13	0.14		
DIBROMOMETHANE						
3-METHYLHEXANE	4.79	8.91	2.45	1.81	1.53	1.84
1,2-DICHLOROPROPANE						
2,3-DICHLOROPROPANE						
TRICHLOROETHYLENE	1.53		0.58			
2,2,4-TRIMETHYLPENTANE	1.46	2.43	3.03	1.62	0.75	0.75
1-HEPTENE						
HEPTANE	1.80	4.91	1.18	0.81	0.60	0.73
1-CHLORO-3-METHYLBUTANE						
TRANS-2-HEPTENE						

METHYLCYCLOHEXANE	2.23	4.11	1.06	0.71	0.50	0.51
2,5-DIMETHYLHEXANE		0.99	0.80	0.45	0.17	0.18
4-METHYLCYCLOHEXENE	0.28	0.57	0.25	0.18	0.13	0.14
1-CHLOROPENTANE				0.30		
1,1,2-TRICHLOROETHANE						
TOLUENE	7.16	11.38	7.29	3.73	4.04	4.00
1,3-DICHLOROPROPANE						
2-METHYLHEPTANE		0.80				
1,2-DIBROMOETHANE						
1-OCTENE			0.29			
TRANS1,2DIMETHYLCYLOHEXANE		0.21	0.11	0.10		
TRANS-4-OCTENE			0.14			
TETRACHLOROETHYLENE		1.74	0.75	0.68	1.41	2.04
OCTANE	0.61	1.21	0.66	0.47	0.37	0.40
2-METHYL-1-HEPTENE						
2-OCTENE						
CIS-1,2-DIMETHYLCYCLOHEXANE						
CHLOROBENZENE						
PROPYLCYCLOPENTANE						
ETHYLCYCLOHEXANE		0.51		0.21	0.21	0.21
1-CHLOROHEXANE						
ETHYLBENZENE	1.25	3.50	2.51	1.71	1.33	1.46
M-XYLENE	3.03	5.79	4.02	3.41	2.17	2.41
STYRENE						
1,4-DICHLOROBUTANE						
O-XYLENE	0.97	1.84	1.26	0.89	0.57	0.68
1,1,2,2-TETRACHLOROETHANE						
1,2,3-TRICHLOROPROPANE		1.63				
1-NONENE						
NONANE	0.79	1.09	0.81	0.43	0.28	0.40
ISOPROPYLBENZENE						
2-CHLOROTOLUENE						
3-CHLOROTOLUENE						
N-PROPYLBENZENE						
4-CHLOROTOLUENE						
3-ETHYLTOLUENE	0.80	0.73				
4-ETHYLTOLUENE						
1,3,5-TRIMETHYLBENZENE						
2-ETHYLTOLUENE						
T-BUTYLBENZENE	1.06	0.82	0.50			
1,2,4-TRIMETHYLBENZENE						
1,3-DICHLOROBENZENE						
1-DECENE						
A-CHLOROTOLUENE						
1,5-DICHLOROPENTANE						
DECANE	1.84	1.70	1.36			
SEC.BUTYLBENZENE						
3-(CHLOROMETHYL)-HEPTANE						
1,2,3-TRIMETHYLBENZENE	0.51					
1-ISOPROPYL-4-METHYLBENZENE						
1,2-DICHLOROBENZENE						
INDAN						
N-BUTYLCYCLOHEXANE						
1,3-DIETHYLBENZENE						
1,4-DIETHYLBENZENE						
N-BUTYLBENZENE						
1,2-DIETHYLBENZENE						
DECALIN						
UNDECANE	2.94		1.76			
1,2,3,5-TETRAMETHYLBENZENE						
DIISOPROPYLBENZENE						
1,2,3,4-TETRAMETHYLBENZENE						
TETRALIN						
DODECANE	1.96		3.83			

Total hydrocarbons ug/m3:	107.80	116.28	196.49	50.77	56.61	29.38
Alkanes ug/m3	72.75	62.46	151.06	27.71	28.19	12.61
Cycloalkanes ug/m3	4.73	9.72	2.89	5.20	1.58	1.37
Alkenes ug/m3	0.87	0.23	2.23	0.72	0.58	0.00
Cycloalkenes ug/m3	0.28	0.57	0.38	0.32	0.13	0.14
Alkynes ug/m3	0.00	0.00	0.00	0.00	6.69	0.00
Aromatics ug/m3	27.64	38.83	31.99	14.60	16.25	12.45
Chlorinated alkanes ug/m3	0.00	2.73	6.36	1.54	1.78	0.77
Chlorinated alkenes ug/m3	1.53	1.74	1.58	0.68	1.41	2.04
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00	0.00	0.00
Total # of compounds identified	30	32	43	32	30	24
Total # of peaks	66	63	96	69	57	57
Total area of peaks	6600.32	6043.51	9709.53	2686.23	3221.57	1805.41
Area of identified peaks	4290.48	4720.37	8028.87	2068.25	2312.08	1146.76
Area % identified peaks	65	78	83	77	72	64
Toluene:Ethylbenzene	5.73	3.25	2.90	2.18	3.04	2.74
Benzene:Ethylbenzene	10.29	4.22	6.54	2.84	6.12	2.67
Xylenes:Ethylbenzene	3.20	2.18	2.10	2.51	2.06	2.12
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
units ug/m3 DATE: JULY 4/84

TIME PERIOD

COMPOUND NAME	0810-0910	0910-1010	1010-1110	1210-1310	1310-1410	1410-1510	1710-1810
PROPANE	7.92		5.81			7.99	
PROPADIENE							
PROPYNE							
CHLOROMETHANE			0.61	1.37		0.61	
CYCLOPROPANE							
ISOBUTANE	4.55		3.16			5.28	
VINYL CHLORIDE							
1-BUTENE	0.90						
1,3-BUTADIENE							
BUTANE	13.64		9.69	8.09	4.83	11.70	
1-BUTYNE					0.49		
CHLORDETHANE							
3-METHYL-1-BUTENE							
2-METHYLBUTANE	9.55		8.60	12.85	5.66	10.06	
1-PENTENE							
PENTANE	4.40		4.07	4.77	0.94	4.26	0.37
ISOPRENE							
TRANS-2-PENTENE	0.35		0.42				
DICHLOROMETHANE	0.86		1.89			1.55	
2-METHYL-2-BUTENE	0.15						
2-CHLORO-2-METHYLBUTANE							
3-CHLOROPROPENE							
2,2-DIMETHYLBUTANE	0.32		0.32	0.32	0.27	0.22	
3-METHYL-1-PENTENE							
2,3-DIMETHYLBUTANE	0.68	0.30	0.60	0.67	0.41	0.53	0.23
3-METHYLPENTANE	1.32	0.78	1.12	1.22	0.84	1.00	0.71
1-HEXENE							
CIS-1,2-DICHLORDETHYLENE							
2-CHLOROBUTANE							
HEXANE	2.22	1.52	1.72	1.97	1.44	1.71	1.59
CHLOROFORM							
TRANS-3-HEXENE							
3-CHLORO-2-METHYLPROPENE							
METYHYLCYCLOPENTANE	0.83	0.49	0.75	0.86	0.51	0.62	0.46
1,2-DICHLORDETHANE							
1,1,1-TRICHLORDETHANE		0.42					
1-CHLOROBUTANE							
BENZENE	8.60	3.79	6.49	6.71	4.51	6.70	5.26
CARBON TETRACHLORIDE							
CYCLOHEXANE	0.30		0.26				
2-METHYLHEXANE	1.78	1.10	1.59	2.10	1.29	1.52	1.93
2,3-DIMETHYLPENTANE	0.63	0.84			0.71	0.83	1.06
CYCLOHEXENE							
DIBROMOMETHANE							
3-METHYLHEXANE	1.96	1.42	1.32	1.40	0.86	0.97	1.44
1,2-DICHLOROPROPANE							
2,3-DICHLOROPROPANE							
TRICHLORDETHYLENE					0.09	0.10	0.14
2,2,4-TRIMETHYLPENTANE	1.03	0.71	0.63	0.50	0.41	0.52	0.69
1-HEPTENE							
HEPTANE	1.06	0.66	0.55	0.57	0.39	0.45	0.65
1-CHLORO-3-METHYLBUTANE							

TRANS-2-HEPTENE							
METHYLCYCLOHEXANE	0.48	0.37	0.32	0.48	0.33	0.34	0.42
2,5-DIMETHYLHEXANE	0.28						
4-METHYLCYCLOHEXENE	0.13						
1-CHLOROPENTANE							
1,1,2-TRICHLOROETHANE							
TOLUENE	8.98	5.24	4.31	2.24	1.42	2.02	2.74
1,3-DICHLOROPROPANE							
2-METHYLHEPTANE							
1,2-DIBROMOETHANE							
1-OCTENE							
TRANS1,2DIMETHYLCYLOHEXANE							
TRANS-4-OCTENE							
TETRACHLOROETHYLENE	1.38	0.94	1.04	0.94	0.81	1.08	0.99
OCTANE	0.45	0.27	0.18	0.22		0.24	0.23
2-METHYL-1-HEPTENE							
2-OCTENE							
CIS-1,2-DIMETHYLCYCLOHEXANE							
CHLOROBENZENE	0.23	0.67	0.45				
PROPYLCYCLOPENTANE							
ETHYLCYCLOHEXANE						0.19	
1-CHLOROHEXANE							
ETHYLBENZENE	1.01	0.63	0.47	0.77		0.96	0.94
M-XYLENE	2.73	1.31	0.75	0.94	0.65	0.73	1.68
STYRENE							
1,4-DICHLOROBUTANE							
O-XYLENE	0.87	0.42	0.25	0.30	0.21	0.21	0.97
1,1,2,2-TETRACHLOROETHANE							
1,2,3-TRICHLOROPROPANE							
1-NONENE							
NONANE	0.57	0.38				0.20	0.42
ISOPROPYLBENZENE							
2-CHLOROTOLUENE							
3-CHLOROTOLUENE							
N-PROPYLBENZENE							
4-CHLOROTOLUENE							
3-ETHYLTOLUENE	0.33						
4-ETHYLTOLUENE							
1,3,5-TRIMETHYLBENZENE							
2-ETHYLTOLUENE							
T-BUTYLBENZENE	0.20						
1,2,4-TRIMETHYLBENZENE							
1,3-DICHLOROBENZENE							
1-DECENE							
A-CHLOROTOLUENE							
1,5-DICHLOROPENTANE							
DECANE	1.63	0.65					0.63
SEC.BUTYLBENZENE							
3-(CHLOROMETHYL)-HEPTANE							
1,2,3-TRIMETHYLBENZENE							
1-ISOPROPYL-4-METHYLBENZENE							
1,2-DICHLOROBENZENE							
INDAN							
N-BUTYLCYCLOHEXANE							
1,3-DIETHYLBENZENE							
1,4-DIETHYLBENZENE							
N-BUTYLBENZENE							
1,2-DIETHYLBENZENE							
DECALIN							
UNDECANE							
1,2,3,5-TETRAMETHYLBENZENE							
DIISOPROPYLBENZENE							
1,2,3,4-TETRAMETHYLBENZENE							
TETRALIN							
DODECANE.							

Total hydrocarbons ug/m3:	82.32	22.91	57.37	49.29	27.07	62.59	23.55
Alkanes ug/m3	53.99	8.63	39.36	34.68	18.05	47.48	9.95
Cycloalkanes ug/m3	1.61	0.86	1.33	1.34	0.84	1.15	0.88
Alkenes ug/m3	1.40	0.00	0.42	0.00	0.00	0.00	0.00
Cycloalkenes ug/m3	0.13	0.00	0.00	0.00	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.49	0.00	0.00
Aromatics ug/m3	22.72	11.39	12.27	10.96	6.79	10.62	11.59
Chlorinated alkanes ug/m3	0.86	0.42	2.50	1.37	0.00	2.16	0.00
Chlorinated alkenes ug/m3	1.38	0.94	1.04	0.94	0.90	1.18	1.13
Chlorinated aromatics ug/m3	0.23	0.67	0.45	0.00	0.00	0.00	0.00
Total # of compounds identified	35	21	27	21	21	28	21
Total # of peaks	65	44	50	50	51	48	51
Total area of peaks	4739.95	1322.68	3375.11	3097.19	2081.44	3389.10	1318.12
Area of identified peaks	3437.58	909.89	2545.18	2199.79	1180.19	2672.74	928.71
Area % identified peaks	73	69	75	71	57	79	70
Toluene:Ethylbenzene	8.89	8.32	9.17	2.91		2.10	2.91
Benzene:Ethylbenzene	8.51	6.02	13.81	8.71		6.98	5.60
Xylenes:Ethylbenzene	3.56	2.75	2.13	1.61		0.98	2.82
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00		1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
units ug/m3 DATE: JULY 5/84

TIME PERIOD

COMPOUND NAME	1045-1145	1145-1245	1245-1345
PROPANE	11.65		
PROPADIENE			
PROPYNE			
CHLOROMETHANE			
CYCLOPROPANE			
ISOBUTANE	5.88		
VINYL CHLORIDE			
1-BUTENE	1.21		
1,3-BUTADIENE			
BUTANE	17.16	1.58	11.12
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE	13.82		11.09
1-PENTENE			
PENTANE		0.53	4.73
ISOPRENE			
TRANS-2-PENTENE	0.41		0.45
DICHLOROMETHANE			1.27
2-METHYL-2-BUTENE			
2-CHLORO-2-METHYLBUTANE			
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE	0.48		0.46
3-METHYL-1-PENTENE			
2,3-DIMETHYLBUTANE	1.00	0.20	0.76
3-METHYLPENTANE	1.89	1.50	1.57
1-HEXENE			
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE	2.92	2.28	2.54
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE	1.14	0.89	0.93
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1-CHLOROBUTANE			
BENZENE	7.70	3.58	4.50
CARBON TETRACHLORIDE			
CYCLOHEXANE	0.44	0.30	0.30
2-METHYLHEXANE	2.10	1.96	3.31
2,3-DIMETHYLPENTANE	0.84	0.64	
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE	2.46	2.20	2.45
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			
2,2,4-TRIMETHYLPENTANE	1.23	1.06	0.83
1-HEPTENE			
HEPTANE	1.07	1.04	0.95
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			

METHYLCYCLOHEXANE	0.59	0.66	0.54
2,5-DIMETHYLHEXANE	0.30	0.27	0.23
4-METHYLCYCLOHEXENE	0.15	0.17	0.15
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	5.47	4.86	6.54
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE			
1,2-DIBROMOETHANE			
1-OCTENE			
TRANS1,2DIMETHYLCYLOHEXANE			
TRANS-4-OCTENE			
TETRACHLOROETHYLENE	0.72	0.51	0.53
OCTANE	0.42	0.52	0.43
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE		0.19	0.21
1-CHLOROHEXANE			
ETHYLBENZENE	1.32	1.41	1.66
M-XYLENE	2.49	3.06	3.46
STYRENE			
1,4-DICHLOROBUTANE			
O-XYLENE	0.88	0.84	0.75
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE			
1-NONENE			
NONANE	0.36	0.48	0.31
ISOPROPYLBENZENE			
2-CHLOROTOLUENE			
3-CHLOROTOLUENE			
N-PROPYLBENZENE			
4-CHLOROTOLUENE			
3-ETHYLTOLUENE		0.13	
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE			
2-ETHYLTOLUENE			
T-BUTYLBENZENE			
1,2,4-TRIMETHYLBENZENE			
1,3-DICHLOROBENZENE			
1-DECENE			
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			
DECANE	0.59	0.45	
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE			
1-ISOPROPYL-4-METHYLBENZENE			
1,2-DICHLOROBENZENE			
INDAN			
N-BUTYLCYCLOHEXANE			
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE			
1,2,3,5-TETRAMETHYLBENZENE			
DIISOPROPYLBENZENE			
1,2,3,4-TETRAMETHYLBENZENE			
TETRALIN			
DODECANE			

Total hydrocarbons ug/m3:	86.69	31.31	62.07
Alkanes ug/m3	64.17	14.71	40.78
Cycloalkanes ug/m3	2.17	2.04	1.98
Alkenes ug/m3	1.62	0.00	0.45
Cycloalkenes ug/m3	0.15	0.17	0.15
Alkynes ug/m3	0.00	0.00	0.00
Aromatics ug/m3	17.86	13.88	16.91
Chlorinated alkanes ug/m3	0.00	0.00	1.27
Chlorinated alkenes ug/m3	0.72	0.51	0.53
Chlorinated aromatics ug/m3	0.00	0.00	0.00
Total # of compounds identified	29	26	27
Total # of peaks	60	56	56
Total area of peaks	5440.40	1935.56	3164.80
Area of identified peaks	3854.93	1335.82	2508.13
Area % identified peaks	71	69	79
Toluene:Ethylbenzene	4.14	3.45	3.94
Benzene:Ethylbenzene	5.83	2.54	2.71
Xylenes:Ethylbenzene	2.55	2.77	2.54
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
units ug/m3 DATE: JULY 6/84

COMPOUND NAME	TIME PERIOD 1042-1142
PROPANE	7.68
PROPADIENE	
PROPYNE	
CHLOROMETHANE	0.59
CYCLOPROPANE	
ISOBUTANE	3.71
VINYL CHLORIDE	
1-BUTENE	
1,3-BUTADIENE	
BUTANE	8.08
1-BUTYNE	
CHLOROETHANE	
3-METHYL-1-BUTENE	
2-METHYLBUTANE	8.04
1-PENTENE	
PENTANE	3.91
ISOPRENE	
TRANS-2-PENTENE	
DICHLOROMETHANE	1.91
2-METHYL-2-BUTENE	
2-CHLORO-2-METHYLBUTANE	
3-CHLOROPROPENE	
2,2-DIMETHYLBUTANE	0.27
3-METHYL-1-PENTENE	
2,3-DIMETHYLBUTANE	0.60
3-METHYLPENTANE	1.19
1-HEXENE	
CIS-1,2-DICHLOROETHYLENE	
2-CHLOROBUTANE	
HEXANE	2.41
CHLOROFORM	
TRANS-3-HEXENE	
3-CHLORO-2-METHYLPROPENE	
METYHYLCYCLOPENTANE	0.78
1,2-DICHLOROETHANE	
1,1,1-TRICHLOROETHANE	
1-CHLOROBUTANE	
BENZENE	5.93
CARBON TETRACHLORIDE	
CYCLOHEXANE	
2-METHYLHEXANE	1.54
2,3-DIMETHYLPENTANE	0.84
CYCLOHEXENE	
DIBROMOMETHANE	
3-METHYLHEXANE	1.33
1,2-DICHLOROPROPANE	
2,3-DICHLOROPROPANE	
TRICHLOROETHYLENE	
2,2,4-TRIMETHYLPENTANE	0.74

1-CHLORO-3-METHYLBUTANE	
TRANS-2-HEPTENE	
METHYLCYCLOHEXANE	0.48
2,5-DIMETHYLHEXANE	
4-METHYLCYCLOHEXENE	
1-CHLOROPENTANE	
1,1,2-TRICHLOROETHANE	
TOLUENE	
1,3-DICHLOROPROPANE	
2-METHYLHEPTANE	
1,2-DIBROMOETHANE	
1-OCTENE	
TRANS1,2DIMETHYLCYLOHEXANE	
TRANS-4-OCTENE	
TETRACHLOROETHYLENE	
OCTANE	0.44
2-METHYL-1-HEPTENE	
2-OCTENE	
CIS-1,2-DIMETHYLCYCLOHEXANE	
CHLOROBENZENE	
PROPYLCYCLOPENTANE	
ETHYLCYCLOHEXANE	
1-CHLOROHEXANE	
ETHYLBENZENE	
M-XYLENE	1.43
STYRENE	
1,4-DICHLOROBUTANE	
O-XYLENE	0.44
1,1,2,2-TETRACHLOROETHANE	
1,2,3-TRICHLOROPROPANE	
1-NONENE	
NONANE	0.90
ISOPROPYLBENZENE	
2-CHLOROTOLUENE	
3-CHLOROTOLUENE	
N-PROPYLBENZENE	
4-CHLOROTOLUENE	
3-ETHYLTOLUENE	
4-ETHYLTOLUENE	
1,3,5-TRIMETHYLBENZENE	
2-ETHYLTOLUENE	
T-BUTYLBENZENE	
1,2,4-TRIMETHYLBENZENE	
1,3-DICHLOROBENZENE	
1-DECENE	
A-CHLOROTOLUENE	
1,5-DICHLOROPENTANE	
DECANE	4.08
SEC.BUTYLBENZENE	
3-(CHLOROMETHYL)-HEPTANE	
1,2,3-TRIMETHYLBENZENE	
1-ISOPROPYL-4-METHYLBENZENE	
1,2-DICHLOROBENZENE	
INDAN	
N-BUTYLCYCLOHEXANE	
1,3-DIETHYLBENZENE	
1,4-DIETHYLBENZENE	
N-BUTYLBENZENE	
1,2-DIETHYLBENZENE	
DECALIN	
UNDECANE	
1,2,3,5-TETRAMETHYLBENZENE	
DIISOPROPYLBENZENE	
1,2,3,4-TETRAMETHYLBENZENE	

Total hydrocarbons ug/m3:	58.06
Alkanes ug/m3	46.50
Cycloalkanes ug/m3	1.26
Alkenes ug/m3	0.00
Cycloalkenes ug/m3	0.00
Alkynes ug/m3	0.00
Aromatics ug/m3	7.80
Chlorinated alkanes ug/m3	2.50
Chlorinated alkenes ug/m3	0.00
Chlorinated aromatics ug/m3	0.00

Total # of compounds identified	24

Total # of peaks	40
Total area of peaks	3192.19
Area of identified peaks	2402.74
Area % identified peaks	75

Toluene:Ethylbenzene

Benzene:Ethylbenzene

Xylenes:Ethylbenzene

Ethylbenzene:Ethylbenzene

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

LOCATION:Camlachie
DATE: JULY 7/84

TIME PERIOD

COMPOUND NAME	0834-0934	0934-1034	1034-1134	1134-1234	1234-1334
PROPANE			2.34		
PROPADIENE					
PROPYNE					0.10
CHLOROMETHANE					
CYCLOPROPANE					
ISOBUTANE			0.86		
VINYL CHLORIDE					
1-BUTENE					
1,3-BUTADIENE					
BUTANE	2.90	0.54	1.55		0.44
1-BUTYNE					
CHLOROETHANE					
3-METHYL-1-BUTENE					
2-METHYLBUTANE	2.39	0.96	1.33		
1-PENTENE					
PENTANE	1.20				0.52
ISOPRENE					
TRANS-2-PENTENE					
DICHLOROMETHANE	1.78				
2-METHYL-2-BUTENE					
2-CHLORO-2-METHYLBUTANE					
3-CHLOROPROPENE					
2,2-DIMETHYLBUTANE					
3-METHYL-1-PENTENE					
2,3-DIMETHYLBUTANE					
3-METHYLPENTANE		0.16	0.21		
1-HEXENE					
CIS-1,2-DICHLOROETHYLENE					
2-CHLOROBUTANE					
HEXANE	0.49	0.32	0.41		
CHLOROFORM					
TRANS-3-HEXENE					
3-CHLORO-2-METHYLPROPENE					
METYHYLCYCLOPENTANE	0.18	0.12	0.12	0.12	0.08
1,2-DICHLOROETHANE					
1,1,1-TRICHLOROETHANE					
1-CHLOROBUTANE					
BENZENE	3.58	2.28	4.56	5.25	2.26
CARBON TETRACHLORIDE					
CYCLOHEXANE			0.16		
2-METHYLHEXANE	0.26		0.47	0.25	
2,3-DIMETHYLPENTANE	0.14			0.14	
CYCLOHEXENE					
DIBROMOMETHANE					
3-METHYLHEXANE	0.20		0.16	0.11	
1,2-DICHLOROPROPANE					
2,3-DICHLOROPROPANE					
TRICHLOROETHYLENE					

HEPTANE
1-CHLORO-3-METHYLBUTANE
TRANS-2-HEPTENE
METHYLCYCLOHEXANE
2,5-DIMETHYLHEXANE
4-METHYLCYCLOHEXENE
1-CHLOROPENTANE
1,1,2-TRICHLOROETHANE
TOLUENE
1,3-DICHLOROPROPANE
2-METHYLHEPTANE
1,2-DIBROMOETHANE
1-OCTENE
TRANS1,2DIMETHYLCYLOHEXANE
TRANS-4-OCTENE
TETRACHLOROETHYLENE
OCTANE
2-METHYL-1-HEPTENE
2-OCTENE
CIS-1,2-DIMETHYLCYCLOHEXANE
CHLOROBENZENE
PROPYLCYCLOPENTANE
ETHYLCYCLOHEXANE
1-CHLOROHEXANE
ETHYLBENZENE

M-XYLENE
STYRENE
1,4-DICHLOROBUTANE
O-XYLENE
1,1,2,2-TETRACHLOROETHANE
1,2,3-TRICHLOROPROPANE
1-NONENE
NONANE
ISOPROPYLBENZENE
2-CHLOROTOLUENE
3-CHLOROTOLUENE
N-PROPYLBENZENE
4-CHLOROTOLUENE
3-ETHYLTOLUENE
4-ETHYLTOLUENE
1,3,5-TRIMETHYLBENZENE
2-ETHYLTOLUENE
T-BUTYLBENZENE
1,2,4-TRIMETHYLBENZENE
1,3-DICHLOROBENZENE
1-DECENE
A-CHLOROTOLUENE
1,5-DICHLOROPENTANE
DECANE
SEC.BUTYLBENZENE
3-(CHLOROMETHYL)-HEPTANE
1,2,3-TRIMETHYLBENZENE
1-ISOPROPYL-4-METHYLBENZENE
1,2-DICHLOROBENZENE
INDAN
N-BUTYLCYCLOHEXANE
1,3-DIETHYLBENZENE
1,4-DIETHYLBENZENE
N-BUTYLBENZENE
1,2-DIETHYLBENZENE
DECALIN
UNDECANE
1,2,3,5-TETRAMETHYLBENZENE
DIISOPROPYLBENZENE

DODECANE

Total hydrocarbons ug/m3:	13.12	4.38	12.17	5.87	3.40
Alkanes ug/m3	7.58	1.98	7.33	0.50	0.96
Cycloalkanes ug/m3	0.18	0.12	0.28	0.12	0.08
Alkenes ug/m3	0.00	0.00	0.00	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.10
Aromatics ug/m3	3.58	2.28	4.56	5.25	2.26
Chlorinated alkanes ug/m3	1.78	0.00	0.00	0.00	0.00
Chlorinated alkenes ug/m3	0.00	0.00	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00	0.00
Total # of compounds identified	10	6	11	5	5
Total # of peaks	20	17	24	15	21
Total area of peaks	770.49	401.76	1074.74	532.71	495.95
Area of identified peaks	484.59	211.69	544.52	301.45	237.66
Area % identified peaks	63	53	51	57	48

Toluene:Ethylbenzene

Benzene:Ethylbenzene

Xylenes:Ethylbenzene

Ethylbenzene:Ethylbenzene

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
DATE: JULY 8/84

units ug/m3

TIME PERIOD

COMPOUND NAME	0818-0916	0916-1016	1016-1116	1116-1216	1216-1316	1316-1416	1416-1516	1516-1616	1616-1716	1716-1816
PROPANE	23.68		1.62		1.10				0.28	
PROPADIENE										
PROPYNE										
CHLOROMETHANE	0.64									
CYCLOPROPANE										
ISOBUTANE	7.68		2.46				1.09		0.66	
VINYL CHLORIDE										
1-BUTENE	0.14									
1,3-BUTADIENE										
BUTANE	18.94		7.60		12.93		5.49		13.92	
1-BUTYNE										
CHLOROETHANE										
3-METHYL-1-BUTENE										
2-METHYLBUTANE	28.80		6.46		10.32		11.51		20.42	
1-PENTENE										
PENTANE	14.93		2.75		3.40		4.49		9.38	
ISOPRENE										
TRANS-2-PENTENE									0.81	
DICHLOROMETHANE	2.54									
2-METHYL-2-BUTENE	0.50								0.29	
2-CHLORO-2-METHYLBUTANE										
3-CHLOROPROPENE										
2,2-DIMETHYLBUTANE	0.80		0.17		0.18		0.25		0.45	
3-METHYL-1-PENTENE										
2,3-DIMETHYLBUTANE			0.36		0.38		0.52	0.07	1.04	
3-METHYLPENTANE	3.44	0.32	0.65	0.16	0.71		1.00	0.27	2.07	0.41
1-HEXENE									0.10	
CIS-1,2-DICHLOROETHYLENE										
2-CHLOROBUTANE										
HEXANE	4.73	0.71	0.89	0.38	0.96	0.13	1.40	1.21	4.11	1.07
CHLOROFORM										
TRANS-3-HEXENE	0.11				0.02		0.04	0.02	0.11	
3-CHLORO-2-METHYLPROPENE									0.27	
METYHYLCYCLOPENTANE	1.71	0.21	0.43	0.10	0.52	0.04	0.73	0.35		0.32
1,2-DICHLOROETHANE									0.45	
1,1,1-TRICHLOROETHANE										
1-CHLOROBUTANE										
BENZENE	7.30	4.91	4.21	3.52	3.18	3.69	3.38	2.55	8.76	3.85
CARBON TETRACHLORIDE										
CYCLOHEXANE			0.16		0.16	0.01	0.20	0.57		
2-METHYLHEXANE	4.49	0.76	1.04	0.39	1.02	0.52	1.59	2.01	3.16	0.71
2,3-DIMETHYLPENTANE		0.34								
CYCLOHEXENE										
DIBROMOMETHANE										
3-METHYLHEXANE	3.28	0.62	0.66	0.39	0.76	0.40	1.20	1.59	2.24	0.84
1,2-DICHLOROPROPANE				0.02						
2,3-DICHLOROPROPANE										
TRICHLOROETHYLENE										
2,2,4-TRIMETHYLPENTANE	1.30	0.17	0.18	0.07		0.13	0.32	0.39	0.45 0.79	0.33
1-HEPTENE										
HEPTANE	1.30	0.23	0.25	0.16	0.32	0.23	0.51	0.80	0.98	0.39
1-CHLORO-3-METHYLBUTANE										
TRANS-2-HEPTENE								0.02		

METHYLCYCLOHEXANE	0.79	0.15	0.25	0.20		0.20	0.60	0.68		0.25
2,5-DIMETHYLHEXANE	0.37					0.06	0.11	0.17	0.23	
4-METHYLCYCLOHEXENE	0.21				0.08	0.07	0.13	0.17	0.21	0.06
1-CHLOROPENTANE										0.05
1,1,2-TRICHLOROETHANE										
TOLUENE	4.33	1.15	0.76	0.47	0.82	0.92	1.35	2.04	2.69	0.88
1,3-DICHLOROPROPANE										
2-METHYLHEPTANE				0.09	0.22	0.23	0.36	0.38	0.48	
1,2-DIBROMOETHANE										
1-OCTENE					0.11	0.09	0.21	0.21	0.23	
TRANS1,2DIMETHYLCYLOHEXANE					0.09	0.09	0.14	0.14	0.13	
TRANS-4-OCTENE							0.17	0.18		
TETRACHLOROETHYLENE								0.28	0.47	
OCTANE	0.50	0.12	0.11	0.11	0.31	0.37	0.55	0.63	0.66	0.09
2-METHYL-1-HEPTENE										
2-OCTENE										
CIS-1,2-DIMETHYLCYCLOHEXANE										
CHLOROBENZENE										
PROPYLCYCLOPENTANE							0.07	0.32		
ETHYLCYCLOHEXANE	0.28	0.05	0.06	0.07	0.20	0.21	0.32		0.45	
1-CHLOROHEXANE										
ETHYLBENZENE	1.06	0.30	0.41	0.51	1.44	2.05	2.66	3.26	2.89	
M-XYLENE	2.78	0.91	1.16	1.80	4.22	5.81	6.93	9.20	7.42	
STYRENE										
1,4-DICHLOROBUTANE										
O-XYLENE	1.02	0.34	0.26	0.28	0.77	1.14	1.48	2.08	1.77	0.18
1,1,2,2-TETRACHLOROETHANE										
1,2,3-TRICHLOROPROPANE	1.45	0.67			0.56	0.80	1.38	1.58	1.51	
1-NONENE	0.29	0.10			0.07		0.18	0.20	0.32	
NONANE	0.88	0.55	0.24		0.30	0.47	0.78	0.94	0.95	
ISOPROPYLBENZENE							0.06	0.14	0.12	
2-CHLOROTOLUENE										
3-CHLOROTOLUENE										
N-PROPYLBENZENE								0.38	0.12	
4-CHLOROTOLUENE						0.32			0.19	
3-ETHYLTOLUENE		0.08					0.06	0.30	0.25	
4-ETHYLTOLUENE										
1,3,5-TRIMETHYLBENZENE			0.07				0.19	0.33	0.36	
2-ETHYLTOLUENE										
T-BUTYLBENZENE								0.28	0.39	
1,2,4-TRIMETHYLBENZENE								0.49	0.68	
1,3-DICHLOROBENZENE										
1-DECENE										
A-CHLOROTOLUENE										
1,5-DICHLOROPENTANE										
DECANE								0.63	1.10	
SEC.BUTYLBENZENE										
3-(CHLOROMETHYL)-HEPTANE										
1,2,3-TRIMETHYLBENZENE										
1-ISOPROPYL-4-METHYLBENZENE										
1,2-DICHLOROBENZENE										
INDAN										
N-BUTYLCYCLOHEXANE		0.07	0.05			0.05	0.09	0.17	0.24	
1,3-DIETHYLBENZENE										
1,4-DIETHYLBENZENE										
N-BUTYLBENZENE										
1,2-DIETHYLBENZENE										
DECALIN										
UNDECANE										
1,2,3,5-TETRAMETHYLBENZENE										
DIISOPROPYLBENZENE										
1,2,3,4-TETRAMETHYLBENZENE										
TETRALIN										
DODECANE										

Total hydrocarbons ug/m3:	140.27	12.76	33.26	8.72	45.15	18.03	51.54	35.03	94.60	9.43
Alkanes ug/m3	115.12	3.82	25.44	1.75	32.91	2.54	31.17	9.09	62.92	3.84
Cycloalkanes ug/m3	2.78	0.48	0.95	0.37	0.97	0.60	2.15	2.23	0.82	0.57
Alkenes ug/m3	1.04	0.10	0.00	0.00	0.20	0.09	0.60	0.63	1.86	0.00
Cycloalkenes ug/m3	0.21	0.00	0.00	0.00	0.08	0.07	0.13	0.17	0.21	0.06
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	16.49	7.69	6.87	6.58	10.43	13.61	16.11	21.05	25.45	4.91
Chlorinated alkanes ug/m3	4.63	0.67	0.00	0.02	0.56	0.80	1.38	1.58	1.96	0.05
Chlorinated alkenes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.28	1.19	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00	0.00	0.32	0.00	0.00	0.19	0.00
Total # of compounds identified	31	21	26	17	28	24	37	37	45	14
Total # of peaks	97	62	59	38	72	56	98	92	99	40
Total area of peaks	7227.32	758.82	2043.98	480.21	2586.19	811.03	2774.18	1582.61	4822.05	627.36
Area of identified peaks	5680.20	533.48	1403.98	386.49	1855.28	706.28	1904.00	1219.82	3759.55	424.66
Area % identified peaks	79	70	69	80	72	87	69	77	78	68
Toluene:Ethylbenzene	4.08	3.83	1.85	0.92	0.57	0.45	0.51	0.63	0.93	
Benzene:Ethylbenzene	6.89	16.37	10.27	6.90	2.21	1.80	1.27	0.78	3.03	
Xylenes:Ethylbenzene	3.58	4.17	3.46	4.08	3.47	3.39	3.16	3.46	3.18	
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
units ug/m3 DATE: JULY 9/84

TIME PERIOD

COMPOUND NAME	1055-1155	1155-1255
PROPANE	7.08	6.82
PROPADIENE		
PROPYNE		
CHLOROMETHANE		
CYCLOPROPANE	0.27	0.78
ISOBUTANE	2.72	2.30
VINYL CHLORIDE		
1-BUTENE		
1,3-BUTADIENE		
BUTANE	5.98	5.06
1-BUTYNE		
CHLOROETHANE		
3-METHYL-1-BUTENE		
2-METHYLBUTANE	4.31	4.38
1-PENTENE		
PENTANE		2.34
ISOPRENE		
TRANS-2-PENTENE		
DICHLOROMETHANE	2.01	
2-METHYL-2-BUTENE		
2-CHLORO-2-METHYLBUTANE		
3-CHLOROPROPENE		
2,2-DIMETHYLBUTANE		
3-METHYL-1-PENTENE		
2,3-DIMETHYLBUTANE	0.27	0.28
3-METHYLPENTANE	0.55	0.58
1-HEXENE		
CIS-1,2-DICHLOROETHYLENE		
2-CHLOROBUTANE		
HEXANE	1.11	0.98
CHLOROFORM		
TRANS-3-HEXENE		
3-CHLORO-2-METHYLPROPENE		
METYHYLCYCLOPENTANE	0.37	0.37
1,2-DICHLOROETHANE		
1,1,1-TRICHLOROETHANE	0.23	
1-CHLOROBUTANE		
BENZENE	4.47	5.48
CARBON TETRACHLORIDE		
CYCLOHEXANE	0.22	0.21
2-METHYLHEXANE	1.04	0.99
2,3-DIMETHYLPENTANE		
CYCLOHEXENE		
DIBROMOMETHANE		
3-METHYLHEXANE	0.68	0.61
1,2-DICHLOROPROPANE		
2,3-DICHLOROPROPANE		
TRICHLOROETHYLENE		
2,2,4-TRIMETHYLPENTANE	0.18	0.18
1-HEPTENE		
HEPTANE	0.39	0.29
1-CHLORO-3-METHYLBUTANE		

TRANS-2-HEPTENE		
METHYLCYCLOHEXANE	0.31	0.27
2,5-DIMETHYLHEXANE		
4-METHYLCYCLOHEXENE		
1-CHLOROPENTANE		
1,1,2-TRICHLOROETHANE		
TOLUENE	0.87	1.05
1,3-DICHLOROPROPANE		
2-METHYLHEPTANE		
1,2-DIBROMOETHANE		
1-OCTENE		
TRANS1,2DIMETHYLCYLOHEXANE		
TRANS-4-OCTENE		
TETRACHLOROETHYLENE		
OCTANE	0.17	0.18
2-METHYL-1-HEPTENE		
2-OCTENE		
CIS-1,2-DIMETHYLCYCLOHEXANE		
CHLOROBENZENE		
PROPYLCYCLOPENTANE		
ETHYLCYCLOHEXANE	0.08	0.10
1-CHLOROHEXANE		
ETHYLBENZENE	0.52	0.60
M-XYLENE	1.18	0.89
STYRENE		
1,4-DICHLOROBUTANE		
O-XYLENE	0.23	0.21
1,1,2,2-TETRACHLOROETHANE		
1,2,3-TRICHLOROPROPANE		
1-NONENE		
NONANE		0.13
ISOPROPYLBENZENE		
2-CHLOROTOLUENE		
3-CHLOROTOLUENE		
N-PROPYLBENZENE		
4-CHLOROTOLUENE		
3-ETHYLTOLUENE		
4-ETHYLTOLUENE		
1,3,5-TRIMETHYLBENZENE		
2-ETHYLTOLUENE		
T-BUTYLBENZENE		
1,2,4-TRIMETHYLBENZENE		
1,3-DICHLOROBENZENE		
1-DECENE		
A-CHLOROTOLUENE		
1,5-DICHLOROPENTANE		
DECANE		
SEC.BUTYLBENZENE		
3-(CHLOROMETHYL)-HEPTANE		
1,2,3-TRIMETHYLBENZENE		
1-ISOPROPYL-4-METHYLBENZENE		
1,2-DICHLOROBENZENE		
INDAN		
N-BUTYLCYCLOHEXANE		
1,3-DIETHYLBENZENE		
1,4-DIETHYLBENZENE		
N-BUTYLBENZENE		
1,2-DIETHYLBENZENE		
DECALIN		
UNDECANE		
1,2,3,5-TETRAMETHYLBENZENE		
DIISOPROPYLBENZENE		
1,2,3,4-TETRAMETHYLBENZENE		
TETRALIN		
DODECANE		

Total hydrocarbons ug/m3:	35.24	35.08
Alkanes ug/m3	24.48	25.12
Cycloalkanes ug/m3	1.25	1.73
Alkenes ug/m3	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00
Alkynes ug/m3	0.00	0.00
Aromatics ug/m3	7.27	8.23
Chlorinated alkanes ug/m3	2.24	0.00
Chlorinated alkenes ug/m3	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00
Total # of compounds identified	24	24
Total # of peaks	51	54
Total area of peaks	2262.03	2356.04
Area of identified peaks	1623.34	1680.20
Area % identified peaks	72	71
Toluene:Ethylbenzene	1.67	1.75
Benzene:Ethylbenzene	8.60	9.13
Xylenes:Ethylbenzene	2.71	1.83
Ethylbenzene:Ethylbenzene	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
units ug/m3 DATE: JULY 13/84

TIME PERIOD

COMPOUND NAME	0900-1000	1000-1100	1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700	1700-1800
PROPANE	5.14	39.29						4.23	
PROPADIENE									
PROPYNE									
CHLOROMETHANE	3.49	9.36							
CYCLOPROPANE									
ISOBUTANE				2.40			0.22	4.57	
VINYL CHLORIDE									
1-BUTENE	3.78								
1,3-BUTADIENE		11.67							
BUTANE	20.34	51.42		11.94		0.34	0.92	12.93	
1-BUTYNE									
CHLOROETHANE	2.31	1.83							
3-METHYL-1-BUTENE	1.13								
2-METHYLBUTANE	58.28	59.52		12.52			1.51	13.25	
1-PENTENE	0.29	0.33		0.15					
PENTANE	30.98	24.64		4.07			0.19	5.57	
ISOPRENE	2.82	2.25	0.06	0.96					
TRANS-2-PENTENE	0.60	0.45		0.49					
DICHLOROMETHANE	4.88							1.15	
2-METHYL-2-BUTENE	1.35	1.18		0.22					
2-CHLORO-2-METHYLBUTANE									
3-CHLOROPROPENE	0.75	0.37							
2,2-DIMETHYLBUTANE	3.71	3.12	0.07	0.78			0.07	0.38	
3-METHYL-1-PENTENE	0.29	0.25		0.06					
2,3-DIMETHYLBUTANE		4.54	0.20	0.74			0.18	0.69	
3-METHYLPENTANE	21.15	13.98		1.41	0.11	1.15	0.39	1.29	0.11
1-HEXENE	0.90	0.68	0.02	0.17		0.04			
CIS-1,2-DICHLOROETHYLENE									
2-CHLOROBUTANE									
HEXANE	68.13	51.52	1.38	2.04	0.40	1.34	0.84	1.70	0.31
CHLOROFORM									
TRANS-3-HEXENE	0.22	0.28		0.03					
3-CHLORO-2-METHYLPROPENE	1.99	1.06		3.50					
METYHYLCYCLOPENTANE		2.58	0.43		0.10	0.64	0.25		0.10
1,2-DICHLOROETHANE									
1,1,1-TRICHLOROETHANE	1.29	1.29							
1-CHLOROBUTANE									
BENZENE	53.43	68.05	4.41		2.28	4.66	2.61	4.65	3.04
CARBON TETRACHLORIDE									
CYCLOHEXANE			0.16	0.20	0.02	0.13	0.30	0.32	0.06
2-METHYLHEXANE	29.82	20.70	2.32	1.70	1.16	0.98	1.26	1.90	0.72
2,3-DIMETHYLPENTANE						0.44			0.40
CYCLOHEXENE									
DIBROMOMETHANE									
3-METHYLHEXANE	23.69	16.72	1.89	1.45	0.70	0.80	0.76	1.29	0.56
1,2-DICHLOROPROPANE									
2,3-DICHLOROPROPANE	0.65								
TRICHLOROETHYLENE	6.03	3.48	0.25	0.25		0.12		0.24	
2,2,4-TRIMETHYLPENTANE	0.28	6.55	0.75	0.53	0.16	0.24	0.19	0.42	0.25
1-HEPTENE	0.28			0.11			0.20		
HEPTANE	10.34	7.34	0.82	0.55	0.21	0.25		0.44	0.17
1-CHLORO-3-METHYLBUTANE									
TRANS-2-HEPTENE	0.10	0.10							

METHYLCYCLOHEXANE			0.46	0.34	0.13	0.18	0.17	0.30	0.12
2,5-DIMETHYLHEXANE	2.54	2.59	0.28	0.13	0.02				
4-METHYLCYCLOHEXENE	1.29	1.03	0.13	0.10	0.04				0.03
1-CHLOROPENTANE									0.07
1,1,2-TRICHLOROETHANE									
TOLUENE	23.17	23.68	3.70	2.71	1.87	1.44		1.55	
1,3-DICHLOROPROPANE									
2-METHYLHEPTANE	2.08	1.67	0.27						
1,2-DIBROMOETHANE									
1-OCTENE	1.09	0.96		0.09					
TRANS1,2DIMETHYLCYLOHEXANE	0.46	0.40	0.04						
TRANS-4-OCTENE									
TETRACHLOROETHYLENE		2.56	0.66	0.33	0.15			0.57	0.81
OCTANE	3.09	3.36	0.37	0.26	0.09	0.08			
2-METHYL-1-HEPTENE									
2-OCTENE									
CIS-1,2-DIMETHYLCYCLOHEXANE									
CHLOROBENZENE	0.35								
PROPYLCYCLOPENTANE	0.25	0.24							
ETHYLCYCLOHEXANE				0.13	0.05				
1-CHLOROHEXANE									
ETHYLBENZENE	10.05	12.70	0.98	0.66	0.25				
M-IYLENE	10.69	10.53	2.06	1.35	0.62				
STYRENE	1.96	1.65							
1,4-DICHLOROBUTANE									
O-XYLENE		4.13	0.87	0.52	0.23	0.15			
1,1,2,2-TETRACHLOROETHANE									
1,2,3-TRICHLOROPROPANE	3.14	3.54	1.21	1.45					
1-NONENE	0.55	0.71	0.25	0.26					
NONANE	2.32	3.16	1.24	1.01	0.29	0.18			
ISOPROPYLBENZENE	0.30	0.52	0.19	0.14	0.07				
2-CHLOROTOLUENE									
3-CHLOROTOLUENE									
N-PROPYLBENZENE	1.11	1.20	0.15	0.05	0.15				
4-CHLOROTOLUENE		1.02	0.67	0.55					
3-ETHYLTOLUENE		0.87	0.36						
4-ETHYLTOLUENE									
1,3,5-TRIMETHYLBENZENE		1.26			0.17				
2-ETHYLTOLUENE									
T-BUTYLBENZENE		1.94	0.89	0.42					
1,2,4-TRIMETHYLBENZENE				0.73					
1,3-DICHLOROBENZENE									
1-DECENE									
A-CHLOROTOLUENE									
1,5-DICHLOROPENTANE			0.04						
DECANE		6.98	3.70	2.78					
SEC.BUTYLBENZENE									
3-(CHLOROMETHYL)-HEPTANE	0.17								
1,2,3-TRIMETHYLBENZENE		1.05	0.38						
1-ISOPROPYL-4-METHYLBENZENE		0.74	0.46	0.22					
1,2-DICHLOROBENZENE									
INDAN									
N-BUTYLCYCLOHEXANE				0.24	0.05				
1,3-DIETHYLBENZENE									
1,4-DIETHYLBENZENE									
N-BUTYLBENZENE	0.46	0.41							
1,2-DIETHYLBENZENE									
DECALIN									
UNDECANE		5.62							
1,2,3,5-TETRAMETHYLBENZENE									
DIISOPROPYLBENZENE									
1,2,3,4-TETRAMETHYLBENZENE									
TETRALIN									
DODECANE									

Total hydrocarbons ug/m3:	423.51	499.07	32.12	60.74	9.32	13.16	10.06	57.44	6.75
Alkanes ug/m3	281.89	322.72	13.29	44.31	3.14	5.80	6.53	48.66	2.52
Cycloalkanes ug/m3	0.71	3.22	1.09	0.91	0.35	0.95	0.72	0.62	0.28
Alkenes ug/m3	13.40	18.86	0.33	2.54	0.00	0.04	0.20	0.00	0.00
Cycloalkenes ug/m3	1.29	1.03	0.13	0.10	0.04	0.00	0.00	0.00	0.03
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	101.17	128.73	14.45	6.80	5.64	6.25	2.61	6.20	3.04
Chlorinated alkanes ug/m3	15.28	16.02	1.25	1.45	0.00	0.00	0.00	1.15	0.07
Chlorinated alkenes ug/m3	9.42	7.47	0.91	4.08	0.15	0.12	0.00	0.81	0.81
Chlorinated aromatics ug/m3	0.35	1.02	0.67	0.55	0.00	0.00	0.00	0.00	0.00
Total # of compounds identified	50	56	36	45	24	18	16	20	14
Total # of peaks	174	173	101	117	61	45	47	53	29
Total area of peaks	26778.01	31662.11	1710.24	3813.47	474.82	3085.15	762.88	3336.41	376.67
Area of identified peaks	18078.39	20898.76	1167.34	2385.84	379.24	590.11	442.55	2340.40	275.62
Area % identified peaks	68	66	68	63	80	19	58	70	73
Toluene:Ethylbenzene	2.31	1.86	3.78	4.11	7.48				
Benzene:Ethylbenzene	5.32	5.36	4.50	0.00	9.12				
Xylenes:Ethylbenzene	1.06	1.15	2.99	2.83	3.40				
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00	1.00				

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
DATE: JULY 14/84

units ug/m3

TIME PERIOD

COMPOUND NAME	1148-1548	1148-1248	1248-1348	1348-1448	1448-1548
PROPANE	47.83	0.36	10.85		5.02
PROPADIENE					
PROPYNE					
CHLOROMETHANE					
CYCLOPROPANE			1.48		0.54
ISOBUTANE		6.83			2.05
VINYL CHLORIDE					
1-BUTENE	5.96	0.72			
1,3-BUTADIENE			2.83		1.25
BUTANE	59.46	19.12	10.82	1.32	13.19
1-BUTYNE					
CHLOROETHANE	1.77		0.11		
3-METHYL-1-BUTENE					
2-METHYLBUTANE	62.44	30.14	6.33	2.71	11.45
1-PENTENE			0.11		
PENTANE	27.31	16.39	2.92	1.28	4.30
ISOPRENE	2.44		0.51		
TRANS-2-PENTENE	0.98		0.31		
DICHLOROMETHANE	2.38	1.29			
2-METHYL-2-BUTENE	0.71	0.46	0.25		
2-CHLORO-2-METHYLBUTANE					
3-CHLOROPROPENE	0.20				
2,2-DIMETHYLBUTANE	1.71	1.38	0.55	0.12	0.27
3-METHYL-1-PENTENE	0.11	0.11			
2,3-DIMETHYLBUTANE	2.24	2.62	1.03	0.21	0.46
3-METHYLPENTANE	4.99	4.53	2.06	0.51	0.66
1-HEXENE			0.07		
CIS-1,2-DICHLOROETHYLENE					
2-CHLOROBUTANE					
HEXANE	11.88	9.39	3.72	1.39	1.02
CHLOROFORM					
TRANS-3-HEXENE	0.10	0.10	0.03		
3-CHLORO-2-METHYLPROPENE					
METYHYLCYCLOPENTANE	4.11	3.04	1.20	0.34	0.43
1,2-DICHLOROETHANE		1.09			
1,1,1-TRICHLOROETHANE		0.51	0.38		0.23
1-CHLOROBUTANE					
BENZENE	13.11	10.45	7.98	4.36	3.36
CARBON TETRACHLORIDE					
CYCLOHEXANE			0.72	1.32	0.12
2-METHYLHEXANE	9.21	7.95	2.24	1.40	1.19
2,3-DIMETHYLPENTANE			0.99	0.66	0.58
CYCLOHEXENE					
DIBROMOMETHANE					
3-METHYLHEXANE	6.62	5.81	1.94	1.50	0.95
1,2-DICHLOROPROPANE					
2,3-DICHLOROPROPANE					
TRICHLOROETHYLENE					
2,2,4-TRIMETHYLPENTANE	2.84	5.67	1.62	1.42	0.54
1-HEPTENE					
HEPTANE	3.22	2.47	0.83	0.43	0.36
1-CHLORO-3-METHYLBUTANE					
TRANS-2-HEPTENE					

METHYLCYCLOHEXANE	2.14	1.52	0.54	0.30	0.18
2,5-DIMETHYLHEXANE	1.32	2.16	0.41	0.28	
4-METHYLCYCLOHEXENE	0.37	0.37	0.12	0.07	
1-CHLOROPENTANE			0.27		
1,1,2-TRICHLOROETHANE					
TOLUENE	7.37	8.03	3.67		1.94
1,3-DICHLOROPROPANE					
2-METHYLHEPTANE	0.70				
1,2-DIBROMOETHANE					
1-OCTENE	0.64	0.14			
TRANS1,2DIMETHYLCYLOHEXANE	0.16	0.13			
TRANS-4-OCTENE					
TETRACHLOROETHYLENE	2.20	1.18			
OCTANE	1.59	1.02			
2-METHYL-1-HEPTENE					
2-OCTENE					
CIS-1,2-DIMETHYLCYCLOHEXANE	0.22	0.21			
CHLOROBENZENE					
PROPYLCYCLOPENTANE					
ETHYLCYCLOHEXANE	0.39	0.37	0.09		
1-CHLOROHEXANE					
ETHYLBENZENE					
M-XYLENE					
STYRENE					
1,4-DICHLOROBUTANE	0.08				
O-XYLENE	1.62	1.38			
1,1,2,2-TETRACHLOROETHANE					
1,2,3-TRICHLOROPROPANE					
1-NONENE					
NONANE	1.19	0.69			
ISOPROPYLBENZENE					
2-CHLOROTOLUENE					
3-CHLOROTOLUENE					
N-PROPYLBENZENE					
4-CHLOROTOLUENE	0.79	0.60			
3-ETHYLTOLUENE	1.07	0.80	0.06		
4-ETHYLTOLUENE					
1,3,5-TRIMETHYLBENZENE	0.41	0.27			
2-ETHYLTOLUENE	0.45	0.35			
T-BUTYLBENZENE	0.69	0.57			
1,2,4-TRIMETHYLBENZENE	1.21	0.47			
1,3-DICHLOROBENZENE	0.28				
1-DECENE					
A-CHLOROTOLUENE					
1,5-DICHLOROPENTANE	0.02				
DECANE	5.24	1.05	0.36		
SEC.BUTYLBENZENE					
3-(CHLOROMETHYL)-HEPTANE					
1,2,3-TRIMETHYLBENZENE	0.33	0.23			
1-ISOPROPYL-4-METHYLBENZENE	0.19				
1,2-DICHLOROBENZENE					
INDAN	0.21	0.13			
N-BUTYLCYCLOHEXANE	0.16				
1,3-DIETHYLBENZENE					
1,4-DIETHYLBENZENE					
N-BUTYLBENZENE					
1,2-DIETHYLBENZENE					
DECALIN					
UNDECANE	21.17	1.20			
1,2,3,5-TETRAMETHYLBENZENE					
DIISOPROPYLBENZENE					
1,2,3,4-TETRAMETHYLBENZENE					
TETRALIN					
DODECANE	12.61				

Total hydrocarbons ug/m3:	336.44	153.30	67.40	19.62	50.09
Alkanes ug/m3	283.57	118.78	46.67	13.23	42.04
Cycloalkanes ug/m3	7.18	5.27	4.03	1.96	1.27
Alkenes ug/m3	10.94	1.53	4.11	0.00	1.25
Cycloalkenes ug/m3	0.37	0.37	0.12	0.07	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	26.66	22.68	11.71	4.36	5.30
Chlorinated alkanes ug/m3	4.25	2.89	0.76	0.00	0.23
Chlorinated alkenes ug/m3	2.40	1.18	0.00	0.00	0.00
Chlorinated aromatics ug/m3	1.07	0.60	0.00	0.00	0.00
Total # of compounds identified	52	44	34	18	22
Total # of peaks	157	117	88	54	52
Total area of peak	17323.71	8271.45	4487.90	1157.72	2922.39
Area of identified peaks	12689.32	6315.54	2819.62	793.90	2092.09
Area % identified peaks	73	76	63	69	72

Toluene:Ethylbenzene

Benzene:Ethylbenzene

Xylenes:Ethylbenzene

Ethylbenzene:Ethylbenzene

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie

units ug/m3 DATE: JULY 15/84

TIME PERIOD

COMPOUND NAME	0835-0935
PROPANE	11.81
PROPADIENE	
PROPYNE	
CHLOROMETHANE	
CYCLOPROPANE	0.69
ISOBUTANE	6.54
VINYL CHLORIDE	
1-BUTENE	
1,3-BUTADIENE	
BUTANE	9.33
1-BUTYNE	
CHLOROETHANE	
3-METHYL-1-BUTENE	
2-METHYLBUTANE	10.64
1-PENTENE	
PENTANE	3.96
ISOPRENE	0.16
TRANS-2-PENTENE	0.13
DICHLOROMETHANE	0.72
2-METHYL-2-BUTENE	0.08
2-CHLORO-2-METHYLBUTANE	
3-CHLOROPROPENE	
2,2-DIMETHYLBUTANE	0.23
3-METHYL-1-PENTENE	
2,3-DIMETHYLBUTANE	0.66
3-METHYLPENTANE	1.03
1-HEXENE	0.04
CIS-1,2-DICHLOROETHYLENE	
2-CHLOROBUTANE	
HEXANE	1.36
CHLOROFORM	
TRANS-3-HEXENE	
3-CHLORO-2-METHYLPROPENE	
METYHYLCYCLOPENTANE	0.79
1,2-DICHLOROETHANE	
1,1,1-TRICHLOROETHANE	
1-CHLOROBUTANE	
BENZENE	10.30
CARBON TETRACHLORIDE	
CYCLOHEXANE	0.41
2-METHYLHEXANE	1.04
2,3-DIMETHYLPENTANE	0.55
CYCLOHEXENE	
DIBROMOMETHANE	
3-METHYLHEXANE	0.86
1,2-DICHLOROPROPANE	0.80
2,3-DICHLOROPROPANE	
TRICHLOROETHYLENE	
2,2,4-TRIMETHYLPENTANE	
1-HEPTENE	
HEPTANE	
1-CHLORO-3-METHYLBUTANE	
TRANS-2-HEPTENE	

METHYLCYCLOHEXANE	
2,5-DIMETHYLHEXANE	
4-METHYLCYCLOHEXENE	
1-CHLOROPENTANE	
1,1,2-TRICHLOROETHANE	
TOLUENE	
1,3-DICHLOROPROPANE	
2-METHYLHEPTANE	
1,2-DIBROMOETHANE	
1-OCTENE	
TRANS1,2DIMETHYLCYLOHEXANE	
TRANS-4-OCTENE	
TETRACHLOROETHYLENE	
OCTANE	0.14
2-METHYL-1-HEPTENE	
2-OCTENE	
CIS-1,2-DIMETHYLCYCLOHEXANE	
CHLOROBENZENE	
PROPYLCYCLOPENTANE	
ETHYLCYCLOHEXANE	
1-CHLOROHEXANE	
ETHYLBENZENE	0.31
M-XYLENE	0.86
STYRENE	
1,4-DICHLOROBUTANE	
O-XYLENE	0.28
1,1,2,2-TETRACHLOROETHANE	
1,2,3-TRICHLOROPROPANE	
1-NONENE	
NONANE	0.13
ISOPROPYLBENZENE	
2-CHLOROTOLUENE	
3-CHLOROTOLUENE	
N-PROPYLBENZENE	
4-CHLOROTOLUENE	0.08
3-ETHYLTOLUENE	0.08
4-ETHYLTOLUENE	
1,3,5-TRIMETHYLBENZENE	0.06
2-ETHYLTOLUENE	0.05
T-BUTYLBENZENE	0.29
1,2,4-TRIMETHYLBENZENE	0.50
1,3-DICHLOROBENZENE	
1-DECENE	
A-CHLOROTOLUENE	
1,5-DICHLOROPENTANE	
DECANE	0.46
SEC.BUTYLBENZENE	
3-(CHLOROMETHYL)-HEPTANE	
1,2,3-TRIMETHYLBENZENE	
1-ISOPROPYL-4-METHYLBENZENE	
1,2-DICHLOROBENZENE	
INDAN	
N-BUTYLCYCLOHEXANE	
1,3-DIETHYLBENZENE	
1,4-DIETHYLBENZENE	
N-BUTYLBENZENE	
1,2-DIETHYLBENZENE	
DECALIN	
UNDECANE	
1,2,3,5-TETRAMETHYLBENZENE	
DIISOPROPYLBENZENE	
1,2,3,4-TETRAMETHYLBENZENE	
TETRALIN	
DODECANE	

Total hydrocarbons ug/m3:	65.37
Alkanes ug/m3	48.74
Cycloalkanes ug/m3	1.89
Alkenes ug/m3	0.41
Cycloalkenes ug/m3	0.00
Alkynes ug/m3	0.00
Aromatics ug/m3	12.73
Chlorinated alkanes ug/m3	1.52
Chlorinated alkenes ug/m3	0.00
Chlorinated aromatics ug/m3	0.08
Total # of compounds identified	34
Total # of peaks	90
Total area of peaks	4386.81
Area of identified peaks	3137.09
Area % identified peaks	72
Toluene:Ethylbenzene	0.00
Benzene:Ethylbenzene	33.23
Xylenes:Ethylbenzene	3.68
Ethylbenzene:Ethylbenzene	1.00

A1

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
units ug/m3 DATE: JULY 16/84

COMPOUND NAME	TIME PERIOD 1113-1213	1213-1313	1313-1413
PROPANE		1.46	
PROPADIENE			
PROPYNE			
CHLOROMETHANE			
CYCLOPROPANE			
ISOBUTANE			
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE			
1-BUTYNE		0.24	
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE			
1-PENTENE			
PENTANE		0.46	
ISOPRENE			
TRANS-2-PENTENE		0.13	
DICHLOROMETHANE		0.84	
2-METHYL-2-BUTENE			
2-CHLORO-2-METHYLBUTANE			
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE		0.21	
3-METHYL-1-PENTENE			
2,3-DIMETHYLBUTANE		0.13	
3-METHYLPENTANE		0.25	
1-HEXENE			
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE		0.44	
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE		0.17	
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1-CHLOROBUTANE			
BENZENE	0.70	1.74	2.07
CARBON TETRACHLORIDE			
CYCLOHEXANE			
2-METHYLHEXANE		0.40	
2,3-DIMETHYLPENTANE		0.22	
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE		0.17	
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			
2,2,4-TRIMETHYLPENTANE			
1-HEPTENE			
HEPTANE	0.05		
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			

METHYLCYCLOHEXANE		0.06
2,5-DIMETHYLHEXANE		
4-METHYLCYCLOHEXENE		
1-CHLOROPENTANE		
1,1,2-TRICHLOROETHANE		
TOLUENE		
1,3-DICHLOROPROPANE		
2-METHYLHEPTANE		
1,2-DIBROMOETHANE		
1-OCTENE		
TRANS1,2DIMETHYLCYLOHEXANE		
TRANS-4-OCTENE		
TETRACHLOROETHYLENE		
OCTANE	0.13	0.16
2-METHYL-1-HEPTENE		
2-OCTENE		
CIS-1,2-DIMETHYLCYCLOHEXANE		
CHLOROBENZENE		
PROPYLCYCLOPENTANE		
ETHYLCYCLOHEXANE		
1-CHLOROHEXANE		
ETHYLBENZENE	0.15	
M-XYLENE	0.27	
STYRENE		
1,4-DICHLOROBUTANE		
O-XYLENE	0.10	
1,1,2,2-TETRACHLOROETHANE		
1,2,3-TRICHLOROPROPANE		
1-NONENE		
NONANE	0.30	0.42
ISOPROPYLBENZENE	0.07	
2-CHLOROTOLUENE		
3-CHLOROTOLUENE		
N-PROPYLBENZENE		
4-CHLOROTOLUENE		
3-ETHYLTOLUENE	0.08	
4-ETHYLTOLUENE		
1,3,5-TRIMETHYLBENZENE		
2-ETHYLTOLUENE		
T-BUTYLBENZENE	0.06	
1,2,4-TRIMETHYLBENZENE	0.10	
1,3-DICHLOROBENZENE		
1-DECENE		
A-CHLOROTOLUENE		
1,5-DICHLOROPENTANE		
DECANE	6.75	2.59
SEC.BUTYLBENZENE		
3-(CHLOROMETHYL)-HEPTANE		
1,2,3-TRIMETHYLBENZENE		
1-ISOPROPYL-4-METHYLBENZENE		
1,2-DICHLOROBENZENE		
INDAN		
N-BUTYLCYCLOHEXANE		
1,3-DIETHYLBENZENE		
1,4-DIETHYLBENZENE		
N-BUTYLBENZENE		
1,2-DIETHYLBENZENE		
DECALIN		
UNDECANE	31.13	
1,2,3,5-TETRAMETHYLBENZENE		
DIISOPROPYLBENZENE		
1,2,3,4-TETRAMETHYLBENZENE		
TETRALIN		
DODECANE		

Total hydrocarbons ug/m3:	39.89	10.09	2.07
Alkanes ug/m3	38.36	6.91	0.00
Cycloalkanes ug/m3	0.00	0.23	0.00
Alkenes ug/m3	0.00	0.13	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.24	0.00
Aromatics ug/m3	1.53	1.74	2.07
Chlorinated alkanes ug/m3	0.00	0.84	0.00
Chlorinated alkenes ug/m3	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00
Total # of compounds identified	13	18	1
Total # of peaks	24	42	8
Total area of peaks	749.23	914.31	153.38
Area of identified peaks	685.11	353.75	113.78
Area % identified peaks	91	39	74

Toluene:Ethylbenzene	0.00
Benzene:Ethylbenzene	4.67
Xylenes:Ethylbenzene	2.47
Ethylbenzene:Ethylbenzene	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
units ug/m3 DATE: JULY 17/84

COMPOUND NAME	0858-0958	0958-1058	1058-1158
	TIME PERIOD		
PROPANE	12.72	6.97	1.10
PROPADIENE			
PROPYNE		0.08	
CHLOROMETHANE			
CYCLOPROPANE		0.22	
ISOBUTANE		3.82	
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE	16.77	10.23	9.20
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE	14.72	10.44	9.29
1-PENTENE			
PENTANE	6.42	4.46	
ISOPRENE			0.67
TRANS-2-PENTENE			0.29
DICHLOROMETHANE	3.31	1.91	0.62
2-METHYL-2-BUTENE	0.16		0.12
2-CHLORO-2-METHYLBUTANE			
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE	0.47	0.35	0.23
3-METHYL-1-PENTENE	0.07		
2,3-DIMETHYLBUTANE	1.15	0.72	0.61
3-METHYLPENTANE	2.10	1.35	1.15
1-HEXENE	0.14		0.04
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE	3.04	2.04	1.90
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE	1.24	0.78	0.76
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE	0.32	0.47	
1-CHLOROBUTANE			
BENZENE	7.06	11.75	5.60
CARBON TETRACHLORIDE			
CYCLOHEXANE			0.74
2-METHYLHEXANE	2.82	2.34	1.87
2,3-DIMETHYLPENTANE			0.90
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE	1.78	1.51	1.66
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			
2,2,4-TRIMETHYLPENTANE	0.70	0.56	0.71
1-HEPTENE			
HEPTANE	0.96	0.81	0.67
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			

METHYLCYCLOHEXANE	0.59	0.47	0.50
2,5-DIMETHYLHEXANE	0.27	0.28	0.20
4-METHYLCYCLOHEXENE	0.16	0.14	0.12
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	4.46	6.39	5.66
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE			
1,2-DIBROMOETHANE			
1-OCTENE	0.18	0.20	0.01
TRANS1,2DIMETHYLCYLOHEXANE	0.10	0.10	0.06
TRANS-4-OCTENE			
TETRACHLOROETHYLENE	1.96	1.25	0.78
OCTANE	0.60	0.62	0.30
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE	0.28	0.35	0.15
1-CHLOROHEXANE			
ETHYLBENZENE	1.11	1.44	0.77
M-XYLENE	3.18	4.05	2.29
STYRENE		0.26	
1,4-DICHLOROBUTANE			
O-XYLENE	1.02	1.20	0.68
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE	0.78		
1-NONENE			
NONANE	1.17	0.89	0.38
ISOPROPYLBENZENE	0.15	0.32	0.11
2-CHLOROTOLUENE			
3-CHLOROTOLUENE			
N-PROPYLBENZENE	0.33	0.49	0.19
4-CHLOROTOLUENE			
3-ETHYLTOLUENE	0.62	0.44	
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE	0.47	0.77	0.16
2-ETHYLTOLUENE	0.28	0.43	0.19
T-BUTYLBENZENE	0.79	1.11	0.65
1,2,4-TRIMETHYLBENZENE			
1,3-DICHLOROBENZENE			
1-DECENE			
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			
DECANE	4.01	2.05	0.93
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE	0.30	0.45	0.20
1-ISOPROPYL-4-METHYLBENZENE	0.17	0.25	
1,2-DICHLOROBENZENE			
INDAN			0.11
N-BUTYLCYCLOHEXANE		0.20	
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE	5.09	3.55	
1,2,3,5-TETRAMETHYLBENZENE			
DIISOPROPYLBENZENE			
1,2,3,4-TETRAMETHYLBENZENE			
TETRALIN			
DODECANE			

Total hydrocarbons ug/m3:	104.02	88.51	52.57
Alkanes ug/m3	74.79	52.99	31.10
Cycloalkanes ug/m3	2.21	2.12	2.21
Alkenes ug/m3	0.55	0.20	1.13
Cycloalkenes ug/m3	0.16	0.14	0.12
Alkynes ug/m3	0.00	0.08	0.00
Aromatics ug/m3	19.94	29.35	16.61
Chlorinated alkanes ug/m3	4.41	2.38	0.62
Chlorinated alkenes ug/m3	1.96	1.25	0.78
Chlorinated aromatics ug/m3	0.00	0.00	0.00
Total # of compounds identified	43	44	41
Total # of peaks	115	105	107
Total area of peaks	5577.88	5027.87	3449.28
Area of identified peaks	4052.80	3811.62	2400.59
Area % identified peaks	73	76	70
Toluene:Ethylbenzene	4.02	4.44	7.35
Benzene:Ethylbenzene	6.36	8.16	7.27
Xylenes:Ethylbenzene	3.78	3.65	3.86
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Camlachie
units ug/m3 DATE: JULY 18/84

TIME PERIOD

COMPOUND NAME	0905-1005	1005-1105	1105-1205	1205-1305
PROPANE	5.29	2.06	1.91	
PROPADIENE				
PROPYNE				
CHLOROMETHANE				
CYCLOPROPANE	0.17			
ISOBUTANE	1.86			
VINYL CHLORIDE				
1-BUTENE				
1,3-BUTADIENE				
BUTANE	4.19	2.97	2.00	
1-BUTYNE				
CHLOROETHANE				
3-METHYL-1-BUTENE				
2-METHYLBUTANE	3.78	2.62	0.74	
1-PENTENE				
PENTANE	1.93	1.21		
ISOPRENE				
TRANS-2-PENTENE	0.20			
DICHLOROMETHANE	1.09			
2-METHYL-2-BUTENE				
2-CHLORO-2-METHYLBUTANE				
3-CHLOROPROPENE				
2,2-DIMETHYLBUTANE	0.07	0.07		
3-METHYL-1-PENTENE				
2,3-DIMETHYLBUTANE	0.24	0.12		
3-METHYLPENTANE	0.44	0.17	0.11	
1-HEXENE				
CIS-1,2-DICHLOROETHYLENE				
2-CHLOROBUTANE				
HEXANE	0.77	0.32	0.30	0.08
CHLOROFORM				
TRANS-3-HEXENE				
3-CHLORO-2-METHYLPROPENE				
METYHYLCYCLOPENTANE	0.30	0.16	0.06	
1,2-DICHLOROETHANE				
1,1,1-TRICHLOROETHANE	0.25		0.21	
1-CHLOROBUTANE				
BENZENE	3.40	7.13	1.83	5.50
CARBON TETRACHLORIDE				
CYCLOHEXANE	0.09			
2-METHYLHEXANE	0.51	0.46	0.28	
2,3-DIMETHYLPENTANE				
CYCLOHEXENE				
DIBROMOMETHANE				
3-METHYLHEXANE	0.38	0.20	0.14	
1,2-DICHLOROPROPANE				
2,3-DICHLOROPROPANE				
TRICHLOROETHYLENE	0.07			
2,2,4-TRIMETHYLPENTANE		0.09		
1-HEPTENE				
HEPTANE	0.30	0.13		
1-CHLORO-3-METHYLBUTANE				
TRANS-2-HEPTENE				

METHYLCYCLOHEXANE	0.06
2,5-DIMETHYLHEXANE	
4-METHYLCYCLOHEXENE	
1-CHLOROPENTANE	
1,1,2-TRICHLOROETHANE	
TOLUENE	0.91
1,3-DICHLOROPROPANE	
2-METHYLHEPTANE	
1,2-DIBROMOETHANE	
1-OCTENE	
TRANS1,2DIMETHYLCYLOHEXANE	
TRANS-4-OCTENE	
TETRACHLOROETHYLENE	
OCTANE	0.20
2-METHYL-1-HEPTENE	
2-OCTENE	
CIS-1,2-DIMETHYLCYCLOHEXANE	
CHLOROBENZENE	
PROPYLCYCLOPENTANE	
ETHYLCYCLOHEXANE	
1-CHLOROHEXANE	
ETHYLBENZENE	0.22
M-XYLENE	0.63
STYRENE	
1,4-DICHLOROBUTANE	
O-XYLENE	0.18
1,1,2,2-TETRACHLOROETHANE	
1,2,3-TRICHLOROPROPANE	
1-NONENE	
NONANE	0.18
ISOPROPYLBENZENE	
2-CHLOROTOLUENE	
3-CHLOROTOLUENE	
N-PROPYLBENZENE	
4-CHLOROTOLUENE	
3-ETHYLTOLUENE	0.08
4-ETHYLTOLUENE	
1,3,5-TRIMETHYLBENZENE	0.04
2-ETHYLTOLUENE	
T-BUTYLBENZENE	0.13
1,2,4-TRIMETHYLBENZENE	
1,3-DICHLOROBENZENE	
1-DECENE	
A-CHLOROTOLUENE	
1,5-DICHLOROPENTANE	
DECANE	7.32
SEC.BUTYLBENZENE	
3-(CHLOROMETHYL)-HEPTANE	
1,2,3-TRIMETHYLBENZENE	0.06
1-ISOPROPYL-4-METHYLBENZENE	0.06
1,2-DICHLOROBENZENE	
INDAN	
N-BUTYLCYCLOHEXANE	
1,3-DIETHYLBENZENE	
1,4-DIETHYLBENZENE	
N-BUTYLBENZENE	
1,2-DIETHYLBENZENE	
DECALIN	
UNDECANE	11.50
1,2,3,5-TETRAMETHYLBENZENE	
DIISOPROPYLBENZENE	
1,2,3,4-TETRAMETHYLBENZENE	
TETRALIN	
DODECANE	

Total hydrocarbons ug/m3:	46.84	17.77	7.58	5.58
Alkanes ug/m3	38.96	10.42	5.48	0.08
Cycloalkanes ug/m3	0.56	0.22	0.06	0.00
Alkenes ug/m3	0.20	0.00	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00
Aromatics ug/m3	5.71	7.13	1.83	5.50
Chlorinated alkanes ug/m3	1.34	0.00	0.21	0.00
Chlorinated alkenes ug/m3	0.07	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00
Total # of compounds identified	33	15	10	2
Total # of peaks	55	33	25	8
Total area of peaks	2043.00	1814.98	704.06	601.19
Area of identified peaks	1674.88	820.46	320.69	304.59
Area % identified peaks	82	45	46	51

Toluene:Ethylbenzene	4.14
Benzene:Ethylbenzene	15.45
Xylenes:Ethylbenzene	3.68
Ethylbenzene:Ethylbenzene	1.00

SARNIA OXIDANT STUDY - June and July, 1974

GAS CHROMATOGRAPHIC DATA.....Courtright Ambient Air Data

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Courtright
units ug/m3 DATE: June 27,84

TIME PERIOD

COMPOUND NAME	1000-1100	1100-1200	1200-1300	1300-1400	1400-1500	1500-1600	1600-1700
ETHANE							
PROPANE	4.46	3.96	1.78	1.28	1.35	0.19	1.13
PROPADIENE							
PROPYNE		0.53					
CHLOROMETHANE	1.07	0.95	0.93	0.82	0.94	0.11	0.95
CYCLOPROPANE							
ISOBUTANE	2.35	2.00	0.81	0.63	0.64	0.07	0.62
VINYL CHLORIDE							
1-BUTENE							
1,3-BUTADIENE							
BUTANE	5.28	4.18	2.22	1.75	1.65	0.18	1.74
1-BUTYNE		0.10					
CHLOROETHANE							
3-METHYL-1-BUTENE							
2-METHYLBUTANE	4.38	3.35	1.66	1.41	1.42	0.21	1.41
1-PENTENE	0.09						
PENTANE	1.95	1.51	0.76	0.83	0.86	0.11	0.64
ISOPRENE	0.41	0.29					
TRANS-2-PENTENE	0.27	0.20			0.14		
DICHLOROMETHANE	0.80	0.92	0.67				
2-METHYL-2-BUTENE	0.24						
2-CHLORO-2-METHYLBUTANE	0.26						
3-CHLOROPROPENE							
2,2-DIMETHYLBUTANE	0.15	0.14					0.11
3-METHYL-1-PENTENE							
2,3-DIMETHYLBUTANE	0.35	0.26	0.13	0.11	0.11		
3-METHYLPENTANE	0.67	0.52	0.26	0.21	0.23		0.22
1-HEXENE							
CIS-1,2-DICHLOROETHYLENE							
2-CHLOROBUTANE							
HEXANE	1.11	0.89	0.43	0.34	0.37		0.35
CHLOROFORM							
TRANS-3-HEXENE							
3-CHLORO-2-METHYLPROPENE							
METYHYLCYCLOPENTANE	0.44	0.33	0.16	0.14	0.15		0.14
1,2-DICHLOROETHANE							
1,1,1-TRICHLOROETHANE	1.43	0.94	0.80	0.68	0.71		0.74
1-CHLOROBUTANE							
BENZENE	3.60	2.60	2.40	1.12	2.03	2.23	1.02
CARBON TETRACHLORIDE							
CYCLOHEXANE							
2-METHYLHEXANE	1.09	0.78	0.50	0.39	0.40		0.42
2,3-DIMETHYLPENTANE	0.59	0.37	0.28	0.21	0.22		0.23
CYCLOHEXENE							
DIBROMOMETHANE							
3-METHYLHEXANE	0.94	0.67	0.34	0.27	0.28		0.28
1,2-DICHLOROPROPANE							
2,3-DICHLOROPROPANE							
TRICHLOROETHYLENE	0.08						
2,2,4-TRIMETHYLPENTANE	0.38	0.45	0.43	0.45	0.35		0.26
1-HEPTENE							
HEPTANE	0.45	0.36	0.17	0.13	0.14		0.13
1-CHLORO-3-METHYLBUTANE							

TRANS-2-HEPTENE					
METHYLCYCLOHEXANE	0.28	0.21	0.08		0.07
2,5-DIMETHYLHEXANE	0.15				
4-METHYLCYCLOHEXENE					
1-CHLOROPENTANE					
1,1,2-TRICHLOROETHANE					
TOLUENE	3.16	2.27	0.83	0.53	0.75
1,3-DICHLOROPROPANE					
2-METHYLHEPTANE					
1,2-DIBROMOETHANE					
1-OCTENE					
TRANS1,2DIMETHYLCYLOHEXANE					
TRANS-4-OCTENE					
TETRACHLOROETHYLENE	0.97	0.72	0.26		
OCTANE	0.26	0.19			
2-METHYL-1-HEPTENE					
2-OCTENE					
CIS-1,2-DIMETHYLCYCLOHEXANE					
CHLOROBENZENE	0.11				
PROPYLCYCLOPENTANE					
ETHYLCYCLOHEXANE	0.12				
1-CHLOROHEXANE					
ETHYLBENZENE	0.50	0.32			
M-XYLENE	1.12	0.59			
STYRENE					
1,4-DICHLOROBUTANE					
O-XYLENE	0.36	0.20			
1,1,2,2-TETRACHLOROETHANE					
1,2,3-TRICHLOROPROPANE					
1-NONENE					
NONANE	0.15	0.10			
ISOPROPYLBENZENE					
2-CHLOROTOLUENE					
3-CHLOROTOLUENE					
N-PROPYLBENZENE					
4-CHLOROTOLUENE					
3-ETHYLTOLUENE	0.13				
4-ETHYLTOLUENE					
1,3,5-TRIMETHYLBENZENE					
2-ETHYLTOLUENE					
T-BUTYLBENZENE					
1,2,4-TRIMETHYLBENZENE					
1,3-DICHLOROBENZENE					
1-DECENE					
A-CHLOROTOLUENE					
1,5-DICHLOROPENTANE					
DECANE					
SEC.BUTYLBENZENE					
3-(CHLOROMETHYL)-HEPTANE					
1,2,3-TRIMETHYLBENZENE					
1-ISOPROPYL-4-METHYLBENZENE					
1,2-DICHLOROBENZENE					
INDAN					
N-BUTYLCYCLOHEXANE					
1,3-DIETHYLBENZENE					
1,4-DIETHYLBENZENE					
N-BUTYLBENZENE					
1,2-DIETHYLBENZENE					
DECALIN					
UNDECANE					
1,2,3,5-TETRAMETHYLBENZENE					
DIISOPROPYLBENZENE					
1,2,3,4-TETRAMETHYLBENZENE					
TETRALIN					
DODECANE					

Total hydrocarbons ug/m3:	40.15	30.90	15.90	11.30	12.81	3.10	10.39
Alkanes ug/m3	24.71	19.73	9.77	8.01	8.02	0.76	7.54
Cycloalkanes ug/m3	0.84	0.54	0.24	0.14	0.22	0.00	0.14
Alkenes ug/m3	1.01	0.49	0.00	0.00	0.14	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.63	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	8.87	5.98	3.23	1.65	2.78	2.23	1.02
Chlorinated alkanes ug/m3	3.56	2.81	2.40	1.50	1.65	0.11	1.69
Chlorinated alkenes ug/m3	1.05	0.72	0.26	0.00	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.11	0.00	0.00	0.00	0.00	0.00	0.00
Total # of compounds identified	37	31	21	18	20	7	17
Total # of peaks	63	51	31	25	29	12	24
Total area of peaks	2200.00	1750.00	900.00	750.00	725.00	270.00	700.00
Area of identified peaks	1900.00	1400.00	720.00	525.00	625.00	190.00	480.00
Area % identified peaks	86.36	80.00	80.00	70.00	86.21	70.37	68.57

Toluene:Ethylbenzene	6.32	7.09
Benzene:Ethylbenzene	7.20	8.13
Xylenes:Ethylbenzene	2.96	2.47
Ethylbenzene:Ethylbenzene	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Courtright
units ug/m3 DATE: June 28,84

TIME PERIOD

COMPOUND NAME	0850-0950	0950-1050	1050-1150	1150-1250	1400-1500	1500-1600
ETHANE						
PROPANE	2.36	3.16	1.67	0.21	1.24	0.97
PROPADIENE						
PROPYNE						
CHLOROMETHANE		0.73	0.74	0.28	0.71	0.78
CYCLOPROPANE						
ISOBUTANE	1.21	1.09	0.66	0.19	0.80	0.57
VINYL CHLORIDE						
1-BUTENE						
1,3-BUTADIENE						
BUTANE	3.45	2.76	1.88	0.49	2.20	1.67
1-BUTYNE						
CHLOROETHANE						
3-METHYL-1-BUTENE						
2-METHYLBUTANE	2.88	2.15	1.59	0.55	1.90	1.49
1-PENTENE	0.17					
PENTANE	1.44	1.08	0.79	0.31	0.91	0.70
ISOPRENE	0.26					
TRANS-2-PENTENE	0.15		0.15			
DICHLOROMETHANE	0.49					
2-METHYL-2-BUTENE	0.15					
2-CHLORO-2-METHYLBUTANE	0.16					
3-CHLOROPROPENE						
2,2-DIMETHYLBUTANE	0.07					
3-METHYL-1-PENTENE						
2,3-DIMETHYLBUTANE	0.24	0.17	0.14		0.13	0.11
3-METHYLPENTANE	0.46	0.33	0.28	0.12	0.27	0.24
1-HEXENE						
CIS-1,2-DICHLOROETHYLENE						
2-CHLOROBUTANE						
HEXANE	0.84	0.54	0.48	0.18	0.43	0.37
CHLOROFORM						
TRANS-3-HEXENE						
3-CHLORO-2-METHYLPROPENE						
METYHYLCYCLOPENTANE	0.30	0.20	0.17	0.07	0.14	0.13
1,2-DICHLOROETHANE						
1,1,1-TRICHLOROETHANE	1.40	0.45	0.94		0.43	0.67
1-CHLOROBUTANE						
BENZENE	2.47	1.26	1.14	1.85	0.87	0.75
CARBON TETRACHLORIDE						
CYCLOHEXANE					0.05	
2-METHYLHEXANE	1.04	0.60	0.49		0.34	0.40
2,3-DIMETHYLPENTANE	0.57		0.27			0.22
CYCLOHEXENE						
DIBROMOMETHANE						
3-METHYLHEXANE	0.74	0.44	0.35		0.25	0.28
1,2-DICHLOROPROPANE						
2,3-DICHLOROPROPANE						
TRICHLOROETHYLENE						
2,2,4-TRIMETHYLPENTANE	0.38	0.20	0.22		0.12	0.53
1-HEPTENE						
HEPTANE	0.50	0.23	0.18		0.12	0.12
1-CHLORO-3-METHYLBUTANE						

TRANS-2-HEPTENE					
METHYLCYCLOHEXANE	0.17	0.11	0.10		
2,5-DIMETHYLHEXANE	0.19				
4-METHYLCYCLOHEXENE					
1-CHLOROPENTANE					
1,1,2-TRICHLOROETHANE					
TOLUENE	4.04	1.14	0.71	0.20	
1,3-DICHLOROPROPANE					
2-METHYLHEPTANE					
1,2-DIBROMOETHANE					
1-OCTENE					
TRANS1,2DIMETHYLCYLOHEXANE					
TRANS-4-OCTENE					
TETRACHLOROETHYLENE					
OCTANE	0.30	0.13	0.09		
2-METHYL-1-HEPTENE					
2-OCTENE					
CIS-1,2-DIMETHYLCYCLOHEXANE					
CHLOROBENZENE					
PROPYLCYCLOPENTANE					
ETHYLCYCLOHEXANE					
1-CHLOROHEXANE					
ETHYLBENZENE	0.43	0.16			
M-XYLENE	1.09	0.27			
STYRENE					
1,4-DICHLOROBUTANE					
O-XYLENE	0.32	0.07			
1,1,2,2-TETRACHLOROETHANE					
1,2,3-TRICHLOROPROPANE					
1-NONENE					
NONANE	0.13	0.07			
ISOPROPYLBENZENE					
2-CHLOROTOLUENE					
3-CHLOROTOLUENE					
N-PROPYLBENZENE					
4-CHLOROTOLUENE					
3-ETHYLTOLUENE					
4-ETHYLTOLUENE					
1,3,5-TRIMETHYLBENZENE					
2-ETHYLTOLUENE					
T-BUTYLBENZENE					
1,2,4-TRIMETHYLBENZENE					
1,3-DICHLOROBENZENE					
1-DECENE					
A-CHLOROTOLUENE					
1,5-DICHLOROPENTANE					
DECANE	0.16				
SEC.BUTYLBENZENE					
3-(CHLOROMETHYL)-HEPTANE					
1,2,3-TRIMETHYLBENZENE					
1-ISOPROPYL-4-METHYLBENZENE					
1,2-DICHLOROBENZENE					
INDAN					
N-BUTYLCYCLOHEXANE					
1,3-DIETHYLBENZENE					
1,4-DIETHYLBENZENE					
N-BUTYLBENZENE					
1,2-DIETHYLBENZENE					
DECALIN					
UNDECANE	0.11				
1,2,3,5-TETRAMETHYLBENZENE					
DIISOPROPYLBENZENE					
1,2,3,4-TETRAMETHYLBENZENE					
TETRALIN					
DODECANE	0.18	0.98			

Total hydrocarbons ug/m3:	28.85	18.32	13.04	4.25	11.11	10.00
Alkanes ug/m3	17.25	13.93	9.09	2.05	8.71	7.67
Cycloalkanes ug/m3	0.47	0.31	0.27	0.07	0.19	0.13
Alkenes ug/m3	0.73	0.00	0.15	0.00	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	8.35	2.90	1.85	1.85	1.07	0.75
Chlorinated alkanes ug/m3	2.05	1.18	1.68	0.28	1.14	1.45
Chlorinated alkenes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00	0.00	0.00
Total # of compounds identified	34	24	21	10	18	17
Total # of peaks	55	38	30	22	25	22
Total area of peaks	1650.00	1225.00	725.00	1500.00	745.00	750.00
Area of identified peaks	1350.00	885.00	575.00	400.00	520.00	450.00
Area % identified peaks	82	72	79	27	70	60
Toluene:Ethylbenzene	9.40	7.13				
Benzene:Ethylbenzene	5.74	7.88				
Xylenes:Ethylbenzene	3.28	2.13				
Ethylbenzene:Ethylbenzene	1.00	1.00				

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Courtright
units ug/m3 DATE: June 29.84

TIME PERIOD

COMPOUND NAME	0924-1024	1024-1124	1124-1224
ETHANE			
PROPANE	14.18	11.62	1.99
PROPADIENE			
PROPYNE			
CHLOROMETHANE	1.19	1.05	0.76
CYCLOPROPANE			
ISOBUTANE	7.19	6.11	1.95
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE	14.04	11.58	5.36
1-BUTYNE			
CHLOROETHANE	2.77	3.53	
3-METHYL-1-BUTENE	0.27	0.17	
2-METHYLBUTANE	20.66	16.10	6.79
1-PENTENE	0.34	0.25	0.13
PENTANE	10.39	7.73	3.51
ISOPRENE	0.32	0.39	0.40
TRANS-2-PENTENE	0.90	0.67	0.35
DICHLOROMETHANE		0.61	
2-METHYL-2-BUTENE	0.86	0.60	0.29
2-CHLORO-2-METHYLBUTANE	0.92	0.65	0.31
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE	0.70	0.51	0.23
3-METHYL-1-PENTENE			
2,3-DIMETHYLBUTANE	1.19	1.26	0.53
3-METHYLPENTANE	3.76	2.58	1.04
1-HEXENE			
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE	8.82	5.88	1.71
CHLOROFORM			
TRANS-3-HEXENE	0.09		
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE	2.52	1.91	0.62
1,2-DICHLOROETHANE	1.01	0.97	0.44
1,1,1-TRICHLOROETHANE	1.76	0.99	1.31
1-CHLOROBUTANE			
BENZENE	6.91	5.36	1.67
CARBON TETRACHLORIDE			
CYCLOHEXANE	1.94		0.21
2-METHYLHEXANE	5.16	3.73	1.64
2,3-DIMETHYLPENTANE			
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE	3.81	2.70	1.20
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			
2,2,4-TRIMETHYLPENTANE	1.66	1.08	0.42
1-HEPTENE			
HEPTANE	1.97	1.43	0.59
1-CHLORO-3-METHYLBUTANE			

TRANS-2-HEPTENE			
METHYLCYCLOHEXANE	1.30	1.08	0.36
2,5-DIMETHYLHEXANE	0.59	0.34	0.15
4-METHYLCYCLOHEXENE	0.27	0.21	
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	5.00	5.56	6.25
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE			
1,2-DIBROMOETHANE			
1-OCTENE			
TRANS1,2DIMETHYLCYLOHEXANE	0.11	0.11	
TRANS-4-OCTENE	0.14	0.14	
TETRACHLOROETHYLENE	0.91	0.88	0.41
OCTANE	0.75	0.62	0.25
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE	0.28	0.25	
1-CHLOROHEXANE			
ETHYLBENZENE	0.93	0.63	0.32
M-XYLENE	1.99	1.45	0.81
STYRENE			
1,4-DICHLOROBUTANE			
O-XYLENE	0.68	0.52	0.25
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE	0.68		
1-NONENE			
NONANE	0.32	0.28	0.13
ISOPROPYLBENZENE			
2-CHLOROTOLUENE			
3-CHLOROTOLUENE			
N-PROPYLBENZENE	0.16	0.11	
4-CHLOROTOLUENE			
3-ETHYLTOLUENE			0.28
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE			
2-ETHYLTOLUENE	0.19		
T-BUTYLBENZENE		0.42	
1,2,4-TRIMETHYLBENZENE	0.12	0.30	0.08
1,3-DICHLOROBENZENE			
1-DECENE			
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			
DECANE	0.27	0.27	
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE			
1-ISOPROPYL-4-METHYLBENZENE			
1,2-DICHLOROBENZENE			
INDAN			
N-BUTYLCYCLOHEXANE			
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE		0.27	
1,2,3,5-TETRAMETHYLBENZENE			
DIISOPROPYLBENZENE			
1,2,3,4-TETRAMETHYLBENZENE			
TETRALIN			
DODECANE		0.85	

Total hydrocarbons ug/m3:	130.02	103.75	42.74
Alkanes ug/m3	95.46	74.94	27.49
Cycloalkanes ug/m3	6.15	3.35	1.19
Alkenes ug/m3	2.92	2.22	1.17
Cycloalkenes ug/m3	0.27	0.21	0.00
Alkynes ug/m3	0.00	0.00	0.00
Aromatics ug/m3	15.98	14.35	9.66
Chlorinated alkanes ug/m3	8.33	7.80	2.82
Chlorinated alkenes ug/m3	0.91	0.88	0.41
Chlorinated aromatics ug/m3	0.00	0.00	0.00
Total # of compounds identified	45	45	35
Total # of peaks	80	71	55
Total area of peaks	7950.00	6120.00	2400.00
Area of identified peaks	6050.00	4950.00	2000.00
Area % identified peaks	76	81	83
Toluene:Ethylbenzene	5.38	8.83	19.53
Benzene:Ethylbenzene	7.43	8.51	5.22
Xylenes:Ethylbenzene	2.87	3.13	3.31
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Courtright
units ug/m3 DATE: July 3/84

TIME PERIOD

COMPOUND NAME	0945-1045	1045-1145	1145-1245	1245-1345	1345-1445	1445-1545	1545-1645	1645-1745
ETHANE								
PROPANE	7.59	4.46	5.38	3.23	4.38	3.07	3.41	2.91
PROPADIENE								
PROPYNE								
CHLOROMETHANE	0.80	0.96	0.92	1.17	0.82	1.03	0.90	1.06
CYCLOPROPANE								
ISOBUTANE	4.52	3.42	4.93	3.59	3.38	2.21	2.25	2.08
VINYL CHLORIDE								
1-BUTENE								
1,3-BUTADIENE				0.08				
BUTANE	9.02	11.02	15.19	11.30	9.96	6.47	6.52	6.25
1-BUTYNE								
CHLOROETHANE								
3-METHYL-1-BUTENE								
2-METHYLBUTANE	6.86	9.78	13.00	11.21	9.22	4.73	5.09	4.73
1-PENTENE								
PENTANE	3.06	3.82	4.90	4.51	3.83	1.90	2.09	1.83
ISOPRENE								
TRANS-2-PENTENE	0.28							
DICHLOROMETHANE	1.54	2.51	3.12	2.03	1.95	1.22		1.03
2-METHYL-2-BUTENE								
2-CHLORO-2-METHYLBUTANE	0.12							
3-CHLOROPROPENE								
2,2-DIMETHYLBUTANE	0.24	0.31	0.39					
3-METHYL-1-PENTENE								
2,3-DIMETHYLBUTANE	0.50	0.80	0.99	0.88	0.70	0.32	0.35	0.31
3-METHYLPENTANE	0.97	1.46	1.84	1.68	1.41	0.61	0.70	0.59
1-HEXENE								
CIS-1,2-DICHLOROETHYLENE								
2-CHLOROBUTANE								
HEXANE	1.69	2.12	2.66	2.50	1.97	0.90	1.07	0.86
CHLOROFORM								
TRANS-3-HEXENE								
3-CHLORO-2-METHYLPROPENE								
METYHYLCYCLOPENTANE	0.57	0.89	1.10	0.96	0.78	0.31	0.38	0.32
1,2-DICHLOROETHANE								
1,1,1-TRICHLOROETHANE	0.88	2.48	2.11	2.25	1.34	1.28	1.07	1.08
1-CHLOROBUTANE								
BENZENE	1.73	2.63	3.70	4.05	3.26	2.14	2.50	1.95
CARBON TETRACHLORIDE								
CYCLOHEXANE	0.21							
2-METHYLHEXANE	1.49	3.15	3.91	3.41	2.57	1.05	1.16	1.01
2,3-DIMETHYLPENTANE	0.68					0.57	0.64	0.55
CYCLOHEXENE								
DIBROMOMETHANE								
3-METHYLHEXANE	1.23	2.07	2.59	2.33	1.88	0.71	0.81	0.68
1,2-DICHLOROPROPANE								
2,3-DICHLOROPROPANE								
TRICHLOROETHYLENE		0.17	0.20	0.17	0.15			
2,2,4-TRIMETHYLPENTANE	0.51	0.92	1.18	0.99	0.76	0.34	0.31	0.31
1-HEPTENE								
HEPTANE	0.64	0.84	1.02	0.98	0.70	0.30	0.36	0.28
1-CHLORO-3-METHYLBUTANE								

TRANS-2-HEPTENE								
METHYLCYCLOHEXANE	0.34	0.52	0.62	0.58	0.45	0.14	0.21	0.16
2,5-DIMETHYLHEXANE	0.19	0.31	0.38	0.31	0.23			
4-METHYLCYCLOHEXENE		0.13	0.16	0.15	0.13			
1-CHLOROPENTANE								
1,1,2-TRICHLOROETHANE								
TOLUENE	3.70	5.51	6.30	5.05	2.43			
1,3-DICHLOROPROPANE								
2-METHYLHEPTANE						0.11	0.12	0.11
1,2-DIBROMOETHANE								
1-OCTENE								
TRANS1,2DIMETHYLCYLOHEXANE			0.09	0.08				
TRANS-4-OCTENE								
TETRACHLOROETHYLENE	0.37	1.04	1.87	1.83	1.43	0.70	0.58	0.49
OCTANE	0.33	0.43	0.54	0.50	0.32	0.10	0.12	
2-METHYL-1-HEPTENE								
2-OCTENE								
CIS-1,2-DIMETHYLCYCLOHEXANE								
CHLOROBENZENE								
PROPYLCYCLOPENTANE								
ETHYLCYCLOHEXANE	0.12	0.23	0.28	0.25	0.16			
1-CHLOROHEXANE								
ETHYLBENZENE	0.56	0.65	0.73	0.65	0.32			
M-XYLENE	0.75	0.50	0.47	0.37	0.24			
STYRENE								
1,4-DICHLOROBUTANE								
O-XYLENE	0.26	0.18	0.17	0.11	0.06			
1,1,2,2-TETRACHLOROETHANE								
1,2,3-TRICHLOROPROPANE								
1-NONENE								
NONANE	0.18	0.21	0.23	0.20	0.10			
ISOPROPYLBENZENE								
2-CHLOROTOLUENE								
3-CHLOROTOLUENE								
N-PROPYLBENZENE	0.06							
4-CHLOROTOLUENE								
3-ETHYLTOLUENE	0.14							
4-ETHYLTOLUENE								
1,3,5-TRIMETHYLBENZENE								
2-ETHYLTOLUENE								
T-BUTYLBENZENE								
1,2,4-TRIMETHYLBENZENE								
1,3-DICHLOROBENZENE								
1-DECENE								
A-CHLOROTOLUENE								
1,5-DICHLOROPENTANE	0.08							
DECANE	0.20							
SEC.BUTYLBENZENE								
3-(CHLOROMETHYL)-HEPTANE								
1,2,3-TRIMETHYLBENZENE								
1-ISOPROPYL-4-METHYLBENZENE								
1,2-DICHLOROBENZENE								
INDAN								
N-BUTYLCYCLOHEXANE								
1,3-DIETHYLBENZENE								
1,4-DIETHYLBENZENE								
N-BUTYLBENZENE								
1,2-DIETHYLBENZENE								
DECALIN								
UNDECANE	0.43							
1,2,3,5-TETRAMETHYLBENZENE								
DIISOPROPYLBENZENE								
1,2,3,4-TETRAMETHYLBENZENE								
TETRALIN								
DODECANE	2.92							

Total hydrocarbons ug/m3:	55.76	63.52	80.97	67.40	54.93	30.21	30.64	28.59
Alkanes ug/m3	43.25	45.12	59.13	47.62	41.41	23.39	25.00	22.50
Cycloalkanes ug/m3	1.24	1.64	2.09	1.87	1.39	0.45	0.59	0.48
Alkenes ug/m3	0.28	0.00	0.00	0.08	0.00	0.00	0.00	0.00
Cycloalkenes ug/m3	0.00	0.13	0.16	0.15	0.13	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	7.20	9.47	11.37	10.23	6.31	2.14	2.50	1.95
Chlorinated alkanes ug/m3	3.42	5.95	6.15	5.45	4.11	3.53	1.97	3.17
Chlorinated alkenes ug/m3	0.37	1.21	2.07	2.00	1.58	0.70	0.58	0.49
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total # of compounds identified	38	30	31	31	29	22	21	21
Total # of peaks	61	63	63	65	59	37	36	34
Total area of peaks	3120.00	3500.00	4480.00	4050.00	3250.00	1760.00	1700.00	1610.00
Area of identified peaks	2545.00	1840.00	3650.00	3020.00	2450.00	1300.00	1380.00	1035.00
Area % identified peaks	82	53	81	75	75	74	81	64
Toluene:Ethylbenzene	6.61	8.48	8.63	7.77	7.59			
Benzene:Ethylbenzene	3.09	4.05	5.07	6.23	10.19			
Xylenes:Ethylbenzene	1.80	1.05	0.88	0.74	0.94			
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00	1.00			

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Courtright
DATE: July 4.84

units ug/m3

TIME PERIOD

COMPOUND NAME	0846-0946	0946-1046	1046-1146
ETHANE			
PROPANE	3.47	5.09	4.37
PROPADIENE			
PROPYNE			
CHLOROMETHANE		0.70	0.91
CYCLOPROPANE			
ISOBUTANE	1.78	2.76	2.23
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE	4.80	8.09	6.43
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE	3.52	6.66	5.35
1-PENTENE			
PENTANE	1.62	3.15	
ISOPRENE			
TRANS-2-PENTENE			
DICHLOROMETHANE			
2-METHYL-2-BUTENE			
2-CHLORO-2-METHYLBUTANE			
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE			
3-METHYL-1-PENTENE			
2,3-DIMETHYLBUTANE		0.49	
3-METHYLPENTANE	0.54	0.89	
1-HEXENE			
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE	0.93	1.49	1.11
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE	0.35	0.58	
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE	1.38		
1-CHLOROBUTANE			
BENZENE	1.83	1.92	1.92
CARBON TETRACHLORIDE			
CYCLOHEXANE			
2-METHYLHEXANE	0.91	1.77	0.96
2,3-DIMETHYLPENTANE	0.49		0.52
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE	0.75	1.18	0.82
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			
2,2,4-TRIMETHYLPENTANE	0.36	0.62	0.44
1-HEPTENE			
HEPTANE	0.38	0.56	0.39
1-CHLORO-3-METHYLBUTANE			

TRANS-2-HEPTENE			
METHYLCYCLOHEXANE			
2,5-DIMETHYLHEXANE			
4-METHYLCYCLOHEXENE			
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	2.30	2.47	1.33
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE			
1,2-DIBROMOETHANE			
1-OCTENE			
TRANS1,2DIMETHYLCYLOHEXANE			
TRANS-4-OCTENE			
TETRACHLOROETHYLENE			
OCTANE			
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE			
1-CHLOROHEXANE			
ETHYLBENZENE	0.31		
M-XYLENE	0.64		
STYRENE			
1,4-DICHLOROBUTANE			
O-IYLENE	0.22		
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE			
1-NONENE			
NONANE			
ISOPROPYLBENZENE			
2-CHLOROTOLUENE			
3-CHLOROTOLUENE			
N-PROPYLBENZENE			
4-CHLOROTOLUENE			
3-ETHYLTOLUENE			
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE			
2-ETHYLTOLUENE			
T-BUTYLBENZENE			
1,2,4-TRIMETHYLBENZENE			
1,3-DICHLOROBENZENE			
1-DECENE			
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			
DECANE			
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE			
1-ISOPROPYL-4-METHYLBENZENE			
1,2-DICHLOROBENZENE			
INDAN			
N-BUTYLCYCLOHEXANE			
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE			
1,2,3,5-TETRAMETHYLBENZENE			
DIISOPROPYLBENZENE			
1,2,3,4-TETRAMETHYLBENZENE			
TETRALIN			
DODECANE			

Total hydrocarbons ug/m3:	26.58	38.42	26.78
Alkanes ug/m3	19.55	32.75	22.62
Cycloalkanes ug/m3	0.35	0.58	0.00
Alkenes ug/m3	0.00	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00
Aromatics ug/m3	5.30	4.39	3.25
Chlorinated alkanes ug/m3	1.38	0.70	0.91
Chlorinated alkenes ug/m3	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00
Total # of compounds identified	19	16	13
Total # of peaks	21	21	19
Total area of peaks	1350.00	2300.00	1540.00
Area of identified peaks	1150.00	1850.00	1240.00
Area % identified peaks	85	80	81

Toluene:Ethylbenzene	7.42
Benzene:Ethylbenzene	5.90
Xylenes:Ethylbenzene	2.77
Ethylbenzene:Ethylbenzene	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

LOCATION: Courtright
DATE: July 5,84

TIME PERIOD

COMPOUND NAME	0900-1000	1000-1100	1100-1200	1200-1300	1300-1400
ETHANE					
PROPANE	13.96	22.58	14.13	7.30	8.36
PROPADIENE					
PROPYNE					
CHLOROMETHANE		1.31	1.39	0.96	0.99
CYCLOPROPANE					
ISOBUTANE	8.78	13.03	7.14	4.47	5.79
VINYL CHLORIDE					
1-BUTENE					
1,3-BUTADIENE					
BUTANE	24.84	25.10	14.25	11.90	15.94
1-BUTYNE					
CHLOROETHANE		2.79	1.20		
3-METHYL-1-BUTENE					
2-METHYLBUTANE	18.12	22.66	13.76	10.58	14.58
1-PENTENE					
PENTANE	7.80	9.90	6.03	4.33	5.88
ISOPRENE					
TRANS-2-PENTENE		0.50			0.27
DICHLOROMETHANE				1.37	3.22
2-METHYL-2-BUTENE	0.59				0.54
2-CHLORO-2-METHYLBUTANE	0.64			0.19	0.60
3-CHLOROPROPENE					
2,2-DIMETHYLBUTANE	0.48	0.69	0.44	0.33	0.43
3-METHYL-1-PENTENE					
2,3-DIMETHYLBUTANE	1.44	1.55	1.34	0.85	1.14
3-METHYLPENTANE	2.66	3.60	2.40	1.55	2.22
1-HEXENE					
CIS-1,2-DICHLOROETHYLENE					
2-CHLOROBUTANE					
HEXANE	4.42	8.44	4.08	2.17	3.34
CHLOROFORM					
TRANS-3-HEXENE					
3-CHLORO-2-METHYLPROPENE					
METYHYLCYCLOPENTANE	1.74	2.91	1.62	0.89	1.28
1,2-DICHLOROETHANE		1.69	1.67	0.91	0.66
1,1,1-TRICHLOROETHANE	1.92	1.56	1.82	1.41	1.80
1-CHLOROBUTANE					
BENZENE	4.85	8.66	5.97	3.07	4.68
CARBON TETRACHLORIDE					
CYCLOHEXANE	0.96	3.93	1.37		0.42
2-METHYLHEXANE	3.12	7.86	4.53	3.00	4.39
2,3-DIMETHYLPENTANE	1.05				
CYCLOHEXENE					
DIBROMOMETHANE					
3-METHYLHEXANE	3.33	5.30	3.19	2.01	2.98
1,2-DICHLOROPROPANE					
2,3-DICHLOROPROPANE					
TRICHLOROETHYLENE				0.16	
2,2,4-TRIMETHYLPENTANE	1.25	2.17	1.21	0.85	1.20
1-HEPTENE					
HEPTANE	1.48	2.55	1.43	0.78	1.30
1-CHLORO-3-METHYLBUTANE					

TRANS-2-HEPTENE					
METHYLCYCLOHEXANE	0.93	1.70	0.94	0.49	0.70
2,5-DIMETHYLHEXANE	0.54	0.87	0.56	0.29	0.43
4-METHYLCYCLOHEXENE		0.41		0.13	0.19
1-CHLOROPENTANE					
1,1,2-TRICHLOROETHANE					
TOLUENE	6.44	8.78	6.03	4.22	7.29
1,3-DICHLOROPROPANE					
2-METHYLHEPTANE	0.57				
1,2-DIBROMOETHANE					
1-OCTENE					
TRANS1,2DIMETHYLCYLOHEXANE					0.13
TRANS-4-OCTENE					
TETRACHLOROETHYLENE			1.61	0.68	2.03
OCTANE	0.73	1.14	0.71	0.37	0.69
2-METHYL-1-HEPTENE					
2-OCTENE					
CIS-1,2-DIMETHYLCYCLOHEXANE					
CHLOROBENZENE					
PROPYLCYCLOPENTANE					
ETHYLCYCLOHEXANE				0.17	0.40
1-CHLOROHEXANE					
ETHYLBENZENE	1.20	1.60	1.19	0.66	1.50
M-XYLENE	2.60	2.97	1.81	0.68	1.87
STYRENE					
1,4-DICHLOROBUTANE					
O-XYLENE	0.87	1.00	0.66	0.29	0.70
1,1,2,2-TETRACHLOROETHANE					
1,2,3-TRICHLOROPROPANE					
1-NONENE					
NONANE	0.57	0.51	0.32	0.15	0.36
ISOPROPYLBENZENE					0.16
2-CHLOROTOLUENE					
3-CHLOROTOLUENE					
N-PROPYLBENZENE		0.34			
4-CHLOROTOLUENE					
3-ETHYLTOLUENE	0.78		0.78	0.22	0.38
4-ETHYLTOLUENE					
1,3,5-TRIMETHYLBENZENE					
2-ETHYLTOLUENE					
T-BUTYLBENZENE	0.91	1.21			
1,2,4-TRIMETHYLBENZENE	0.65	0.85			
1,3-DICHLOROBENZENE					
1-DECENE					
A-CHLOROTOLUENE					
1,5-DICHLOROPENTANE					
DECANE	0.29	0.49	0.39		0.25
SEC.BUTYLBENZENE					
3-(CHLOROMETHYL)-HEPTANE					
1,2,3-TRIMETHYLBENZENE					
1-ISOPROPYL-4-METHYLBENZENE					
1,2-DICHLOROBENZENE					
INDAN					
N-BUTYLCYCLOHEXANE					
1,3-DIETHYLBENZENE					
1,4-DIETHYLBENZENE					
N-BUTYLBENZENE					
1,2-DIETHYLBENZENE					
DECALIN					
UNDECANE					
1,2,3,5-TETRAMETHYLBENZENE					
DIISOPROPYLBENZENE					
1,2,3,4-TETRAMETHYLBENZENE					
TETRALIN					
DODECANE					

Total hydrocarbons ug/m3	120.51	170.65	103.97	67.43	99.09
Alkanes ug/m3	95.43	128.44	75.91	50.93	69.28
Cycloalkanes ug/m3	3.63	8.54	3.93	1.55	2.93
Alkenes ug/m3	0.59	0.50	0.00	0.00	0.81
Cycloalkenes ug/m3	0.00	0.41	0.00	0.13	0.19
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	18.30	25.41	16.44	9.14	16.58
Chlorinated alkanes ug/m3	2.56	7.35	6.08	4.84	7.27
Chlorinated alkenes ug/m3	0.00	0.00	1.61	0.84	2.03
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00	0.00
Total # of compounds identified	33	34	31	33	38
Total # of peaks	48	50	44	63	76
Total area of peaks	7400.00	10500.00	5500.00	3850.00	5700.00
Area of identified peaks	5850.00	8500.00	4980.00	3080.00	4550.00
Area % identified peaks	79.05	80.95	90.55	80.00	79.82
Toluene:Ethylbenzene	5.37	5.49	5.07	6.39	4.86
Benzene:Ethylbenzene	4.04	5.41	5.02	4.65	3.12
Xylenes:Ethylbenzene	2.89	2.48	2.08	1.47	1.71
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

LOCATION: Courtright
DATE: July 6/84

TIME PERIOD

COMPOUND NAME	0948-1048	1048-1148
ETHANE		
PROPANE	4.08	2.93
PROPADIENE		
PROPYNE		
CHLOROMETHANE	0.42	0.57
CYCLOPROPANE		
ISOBUTANE	2.61	1.53
VINYL CHLORIDE		
1-BUTENE		
1,3-BUTADIENE		
BUTANE	5.07	4.35
1-BUTYNE		
CHLOROETHANE		
3-METHYL-1-BUTENE		
2-METHYLBUTANE	4.17	4.11
1-PENTENE		
PENTANE	1.87	1.99
ISOPRENE		0.56
TRANS-2-PENTENE		0.18
DICHLOROMETHANE		0.71
2-METHYL-2-BUTENE		0.24
2-CHLORO-2-METHYLBUTANE		0.26
3-CHLOROPROPENE		
2,2-DIMETHYLBUTANE		0.17
3-METHYL-1-PENTENE		
2,3-DIMETHYLBUTANE	0.33	0.42
3-METHYLPENTANE	0.63	0.82
1-HEXENE		
CIS-1,2-DICHLOROETHYLENE		
2-CHLOROBUTANE		
HEXANE	1.05	1.26
CHLOROFORM		
TRANS-3-HEXENE		
3-CHLORO-2-METHYLPROPENE		
METYHYLCYCLOPENTANE	0.39	0.53
1,2-DICHLOROETHANE		
1,1,1-TRICHLOROETHANE	1.39	0.85
1-CHLOROBUTANE		
BENZENE	1.51	1.75
CARBON TETRACHLORIDE		
CYCLOHEXANE		0.16
2-METHYLHEXANE	1.36	1.37
2,3-DIMETHYLPENTANE		0.63
CYCLOHEXENE		
DIBROMOMETHANE		
3-METHYLHEXANE	0.85	1.12
1,2-DICHLOROPROPANE		
2,3-DICHLOROPROPANE		
TRICHLOROETHYLENE	0.07	
2,2,4-TRIMETHYLPENTANE	0.37	0.46
1-HEPTENE		
HEPTANE	0.41	0.56
1-CHLORO-3-METHYLBUTANE		

TRANS-2-HEPTENE		
METHYLCYCLOHEXANE	0.25	0.27
2,5-DIMETHYLHEXANE	0.16	0.21
4-METHYLCYCLOHEXENE		
1-CHLOROPENTANE		
1,1,2-TRICHLOROETHANE		
TOLUENE	2.09	2.83
1,3-DICHLOROPROPANE		
2-METHYLHEPTANE		
1,2-DIBROMOETHANE		
1-OCTENE		
TRANS1,2DIMETHYLCYLOHEXANE		
TRANS-4-OCTENE		
TETRACHLOROETHYLENE	0.29	0.64
OCTANE	0.24	0.31
2-METHYL-1-HEPTENE		
2-OCTENE		
CIS-1,2-DIMETHYLCYCLOHEXANE		
CHLOROBENZENE		
PROPYLCYCLOPENTANE		
ETHYLCYCLOHEXANE		0.16
1-CHLOROHEXANE		
ETHYLBENZENE	0.38	0.62
M-XYLENE	0.89	1.41
STYRENE		
1,4-DICHLOROBUTANE		
O-XYLENE	0.27	0.42
1,1,2,2-TETRACHLOROETHANE		
1,2,3-TRICHLOROPROPANE		0.49
1-NONENE		
NONANE	0.17	0.25
ISOPROPYLBENZENE		
2-CHLOROTOLUENE		
3-CHLOROTOLUENE		
N-PROPYLBENZENE		0.09
4-CHLOROTOLUENE		0.14
3-ETHYLTOLUENE	0.28	0.39
4-ETHYLTOLUENE		
1,3,5-TRIMETHYLBENZENE		
2-ETHYLTOLUENE		0.12
T-BUTYLBENZENE		
1,2,4-TRIMETHYLBENZENE	0.10	0.13
1,3-DICHLOROBENZENE		
1-DECENE		
A-CHLOROTOLUENE		
1,5-DICHLOROPENTANE		
DECANE	0.34	0.42
SEC.BUTYLBENZENE		
3-(CHLOROMETHYL)-HEPTANE		
1,2,3-TRIMETHYLBENZENE		
1-ISOPROPYL-4-METHYLBENZENE		
1,2-DICHLOROBENZENE		
INDAN		
N-BUTYLCYCLOHEXANE		
1,3-DIETHYLBENZENE		
1,4-DIETHYLBENZENE		
N-BUTYLBENZENE		
1,2-DIETHYLBENZENE		
DECALIN		
UNDECANE		
1,2,3,5-TETRAMETHYLBENZENE		
DIISOPROPYLBENZENE		
1,2,3,4-TETRAMETHYLBENZENE		
TETRALIN		
DODECANE		

Total hydrocarbons ug/m3:	32.04	36.43
Alkanes ug/m3	23.71	22.91
Cycloalkanes ug/m3	0.64	1.12
Alkenes ug/m3	0.00	0.98
Cycloalkenes ug/m3	0.00	0.00
Alkynes ug/m3	0.00	0.00
Aromatics ug/m3	5.52	7.76
Chlorinated alkanes ug/m3	1.81	2.88
Chlorinated alkenes ug/m3	0.36	0.64
Chlorinated aromatics ug/m3	0.00	0.14
Total # of compounds identified	29	41
Total # of peaks	52	68
Total area of peaks	2030.00	2000.00
Area of identified peaks	1510.00	1640.00
Area % identified peaks	74	82
Toluene:Ethylbenzene	5.50	4.56
Benzene:Ethylbenzene	3.97	2.82
Xylenes:Ethylbenzene	3.05	2.95
Ethylbenzene:Ethylbenzene	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

LOCATION: Courtright
DATE: July 7/84

COMPOUND NAME	TIME PERIOD 0849-0949	0949-1049	1049-1149	1149-1249	1349-1449
ETHANE					
PROPANE	7.39	2.87	2.63	1.51	1.35
PROPADIENE					
PROPYNE					
CHLOROMETHANE		0.62	0.47	0.56	0.55
CYCLOPROPANE					
ISOBUTANE	2.02	1.48	0.91	0.94	0.97
VINYL CHLORIDE					
1-BUTENE					
1,3-BUTADIENE					
BUTANE	1.83	3.06	1.94	2.93	2.48
1-BUTYNE					
CHLOROETHANE					
3-METHYL-1-BUTENE					
2-METHYLBUTANE	1.68	2.52	2.04	4.28	2.81
1-PENTENE					
PENTANE	0.98	1.19	1.11	2.68	1.52
ISOPRENE					
TRANS-2-PENTENE	0.20		0.10		
DICHLOROMETHANE					
2-METHYL-2-BUTENE					
2-CHLORO-2-METHYLBUTANE					
3-CHLOROPROPENE					
2,2-DIMETHYLBUTANE				0.15	0.12
3-METHYL-1-PENTENE					
2,3-DIMETHYLBUTANE	0.15	0.18	0.17	0.44	0.24
3-METHYLPENTANE	0.33	0.33	0.33	0.88	0.48
1-HEXENE					
CIS-1,2-DICHLOROETHYLENE					
2-CHLOROBUTANE					
HEXANE	0.59	0.52	0.50	1.13	0.72
CHLOROFORM					
TRANS-3-HEXENE					
3-CHLORO-2-METHYLPROPENE					
METYHYLCYCLOPENTANE	0.21	0.19	0.18	0.36	0.27
1,2-DICHLOROETHANE	3.24	4.06	3.22	2.18	2.80
1,1,1-TRICHLOROETHANE	1.04	0.56	0.81	0.62	0.56
1-CHLOROBUTANE					
BENZENE	1.71	0.77	0.79	0.79	0.54
CARBON TETRACHLORIDE					
CYCLOHEXANE				0.07	0.08
2-METHYLHEXANE	0.70	0.52	0.55	1.23	0.82
2,3-DIMETHYLPENTANE		0.29			
CYCLOHEXENE					
DIBROMOMETHANE					
3-METHYLHEXANE	0.52	0.37	0.40	0.99	0.62
1,2-DICHLOROPROPANE					
2,3-DICHLOROPROPANE					
TRICHLOROETHYLENE					
2,2,4-TRIMETHYLPENTANE	0.18	0.12	0.17	0.17	0.16
1-HEPTENE					
HEPTANE	0.29	0.18	0.16	0.33	0.23
1-CHLORO-3-METHYLBUTANE					

TRANS-2-HEPTENE					
METHYLCYCLOHEXANE	0.13	0.09	0.09	0.14	0.13
2,5-DIMETHYLHEXANE					
4-METHYLCYCLOHEXENE					
1-CHLOROPENTANE					
1,1,2-TRICHLOROETHANE					
TOLUENE	1.00	0.44	0.36	0.53	0.34
1,3-DICHLOROPROPANE					
2-METHYLHEPTANE	0.14				0.06
1,2-DIBROMOETHANE					
1-OCTENE					
TRANS1,2DIMETHYLCYLOHEXANE					
TRANS-4-OCTENE					
TETRACHLOROETHYLENE					
OCTANE	0.19	0.08		0.10	
2-METHYL-1-HEPTENE					
2-OCTENE					
CIS-1,2-DIMETHYLCYCLOHEXANE					
CHLOROBENZENE					
PROPYLCYCLOPENTANE					
ETHYLCYCLOHEXANE					
1-CHLOROHEXANE					
ETHYLBENZENE	0.25				
M-XYLENE	0.94				
STYRENE					
1,4-DICHLOROBUTANE					
O-XYLENE	0.30				
1,1,2,2-TETRACHLOROETHANE					
1,2,3-TRICHLOROPROPANE					
1-NONENE					
NONANE	0.06				
ISOPROPYLBENZENE					
2-CHLOROTOLUENE					
3-CHLOROTOLUENE					
N-PROPYLBENZENE					
4-CHLOROTOLUENE					
3-ETHYLTOLUENE	0.23				
4-ETHYLTOLUENE					
1,3,5-TRIMETHYLBENZENE					
2-ETHYLTOLUENE					
T-BUTYLBENZENE					
1,2,4-TRIMETHYLBENZENE	0.16				
1,3-DICHLOROBENZENE					
1-DECENE					
A-CHLOROTOLUENE					
1,5-DICHLOROPENTANE					
DECANE					
SEC.BUTYLBENZENE					
3-(CHLOROMETHYL)-HEPTANE					
1,2,3-TRIMETHYLBENZENE					
1-ISOPROPYL-4-METHYLBENZENE					
1,2-DICHLOROBENZENE					
INDAN					
N-BUTYLCYCLOHEXANE					
1,3-DIETHYLBENZENE					
1,4-DIETHYLBENZENE					
N-BUTYLBENZENE					
1,2-DIETHYLBENZENE					
DECALIN					
UNDECANE					
1,2,3,5-TETRAMETHYLBENZENE					
DIISOPROPYLBENZENE					
1,2,3,4-TETRAMETHYLBENZENE					
TETRALIN					
DODECANE					

Total hydrocarbons ug/m3:	26.46	20.44	16.93	23.01	17.85
Alkanes ug/m3	17.05	13.71	10.91	17.76	12.58
Cycloalkanes ug/m3	0.34	0.28	0.27	0.57	0.48
Alkenes ug/m3	0.20	0.00	0.10	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	4.59	1.21	1.15	1.32	0.88
Chlorinated alkanes ug/m3	4.28	5.24	4.50	3.36	3.91
Chlorinated alkenes ug/m3	0.00	0.00	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00	0.00
Total # of compounds identified	27	21	20	22	22
Total # of peaks	51	34	32	36	31
Total area of peaks	1490.00	1100.00	960.00	1300.00	960.00
Area of identified peaks	1170.00	800.00	670.00	1120.00	740.00
Area % identified peaks	79	73	70	86	77

Toluene:Ethylbenzene	4.00
Benzene:Ethylbenzene	6.84
Xylenes:Ethylbenzene	4.96
Ethylbenzene:Ethylbenzene	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

LOCATION: Courtright
DATE: July 8/84

TIME PERIOD

COMPOUND NAME	0909-1009	1011-1111	1111-1211	1211-1311	1311-1411	1411-1511	1511-1611	1611-1711	1711-1811
ETHANE									
PROPANE	7.60	1.65	2.82	1.80		1.94	1.21	1.41	1.41
PROPADIENE									
PROPYNE									
CHLOROMETHANE			0.32	0.50		0.70	0.21	0.81	0.82
CYCLOPROPANE							0.01		
ISOBUTANE	4.97	1.79	1.58	1.36		2.39	1.00	0.93	0.94
VINYL CHLORIDE									
1-BUTENE					0.13				
1,3-BUTADIENE									
BUTANE	7.36		2.73	3.09	1.25	9.85	2.38	2.58	3.34
1-BUTYNE									
CHLOROETHANE									
3-METHYL-1-BUTENE						0.13			
2-METHYLBUTANE	6.79	2.47	2.89	3.56	2.14	16.48	2.56	2.42	3.48
1-PENTENE					0.12	0.25			0.13
PENTANE	3.12	0.87	1.51	1.96	1.47	10.04	1.20	1.12	1.62
ISOPRENE									
TRANS-2-PENTENE			0.08		0.11	0.76			0.17
DICHLOROMETHANE									0.55
2-METHYL-2-BUTENE					0.05	0.45			0.12
2-CHLORO-2-METHYLBUTANE					0.05	0.48			0.13
3-CHLOROPROPENE									
2,2-DIMETHYLBUTANE	0.14	0.12	0.11		0.10	0.60			0.16
3-METHYL-1-PENTENE						0.06			
2,3-DIMETHYLBUTANE	0.45		0.22	0.26	0.23	1.39	0.19	0.21	0.32
3-METHYLPENTANE	0.89	0.20	0.47	0.53	0.50	2.59	0.46	0.44	0.67
1-HEXENE	0.04					0.06			
CIS-1,2-DICHLOROETHYLENE									
2-CHLOROBUTANE									
HEXANE	1.45	0.36	0.66	0.87	0.74	3.46	0.82	0.65	1.06
CHLOROFORM									
TRANS-3-HEXENE	0.04					0.10			
3-CHLORO-2-METHYLPROPENE									
METYHYLCYCLOPENTANE	0.58	0.14	0.23	0.37	0.28	1.21	0.25	0.25	0.42
1,2-DICHLOROETHANE	1.13			0.64			1.03	1.37	1.62
1,1,1-TRICHLOROETHANE	1.11		0.76	0.51	0.29	0.70		0.76	0.81
1-CHLOROBUTANE									
BENZENE	1.59	0.56	0.54	1.23	0.54	1.28	0.74	1.08	1.80
CARBON TETRACHLORIDE									
CYCLOHEXANE	0.20					0.28			
2-METHYLHEXANE	1.60	0.30	0.73	0.87	0.87	3.95	1.02	0.87	1.38
2,3-DIMETHYLPENTANE		0.16	0.40		0.47			0.48	
CYCLOHEXENE									
DIBROMOMETHANE									
3-METHYLHEXANE	1.09	0.22	0.56	0.65	0.63	3.11	0.80	0.62	0.98
1,2-DICHLOROPROPANE									
2,3-DICHLOROPROPANE									
TRICHLOROETHYLENE		0.02	0.04	0.06	0.04		0.04	0.05	0.08
2,2,4-TRIMETHYLPENTANE	0.34	0.07	0.13	0.17	0.15	0.50	0.17	0.22	0.36
1-HEPTENE									
HEPTANE	0.52	0.06	0.20	0.25	0.25	1.05	0.25	0.24	0.39
1-CHLORO-3-METHYLBUTANE									

TRANS-2-HEPTENE						0.04			
METHYLCYCLOHEXANE	0.27	0.05	0.09	0.14	0.12	0.40	0.11	0.13	0.24
2,5-DIMETHYLHEXANE	0.15			0.06		0.28		0.08	0.11
4-METHYLCYCLOHEXENE	0.07					0.15			0.06
1-CHLOROPENTANE									
1,1,2-TRICHLOROETHANE									
TOLUENE	2.38	0.27		0.45	0.09	2.00	0.51	0.69	0.73
1,3-DICHLOROPROPANE									
2-METHYLHEPTANE			0.09	0.09		0.39			0.19
1,2-DIBROMOETHANE									
1-OCTENE						0.11			
TRANS1,2DIMETHYLCYLOHEXANE									
TRANS-4-OCTENE									
TETRACHLOROETHYLENE	0.21		0.17				0.10		0.18
OCTANE	0.27	0.02	0.07	0.09		0.39	0.06	0.09	0.14
2-METHYL-1-HEPTENE									
2-OCTENE									
CIS-1,2-DIMETHYLCYCLOHEXANE									
CHLOROBENZENE		0.04							
PROPYLCYCLOPENTANE									
ETHYLCYCLOHEXANE	0.10					0.13			
1-CHLOROHEXANE									
ETHYLBENZENE	0.37			0.09		0.36			
M-XYLENE	0.99			0.22		0.96			0.08
STYRENE								0.04	
1,4-DICHLOROBUTANE									
O-XYLENE	0.30			0.05		0.31			
1,1,2,2-TETRACHLOROETHANE									
1,2,3-TRICHLOROPROPANE									
1-NONENE									
NONANE	0.11			0.03		0.13		0.03	0.04
ISOPROPYLBENZENE	0.03								
2-CHLOROTOLUENE									
3-CHLOROTOLUENE									
N-PROPYLBENZENE	0.05					0.10			
4-CHLOROTOLUENE									
3-ETHYLTOLUENE						0.40			
4-ETHYLTOLUENE									
1,3,5-TRIMETHYLBENZENE	0.03					0.07			
2-ETHYLTOLUENE	0.07					0.14			
T-BUTYLBENZENE	0.17								
1,2,4-TRIMETHYLBENZENE	0.12					0.04			
1,3-DICHLOROBENZENE									
1-DECENE									
A-CHLOROTOLUENE									
1,5-DICHLOROPENTANE									
DECANE	0.08								
SEC.BUTYLBENZENE									
3-(CHLOROMETHYL)-HEPTANE									
1,2,3-TRIMETHYLBENZENE									
1-ISOPROPYL-4-METHYLBENZENE									
1,2-DICHLOROBENZENE									
INDAN									
N-BUTYLCYCLOHEXANE									
1,3-DIETHYLBENZENE									
1,4-DIETHYLBENZENE									
N-BUTYLBENZENE									
1,2-DIETHYLBENZENE									
DECALIN									
UNDECANE									
1,2,3,5-TETRAMETHYLBENZENE									
DIISOPROPYLBENZENE									
1,2,3,4-TETRAMETHYLBENZENE									
TETRALIN									
DODECANE									

Total hydrocarbons ug/m3:	46.78	9.37	17.40	19.90	10.62	70.21	15.12	17.57	24.53
Alkanes ug/m3	36.93	8.29	15.17	15.64	8.80	58.54	12.12	12.39	16.59
Cycloalkanes ug/m3	1.15	0.19	0.32	0.51	0.40	2.02	0.37	0.38	0.66
Alkenes ug/m3	0.08	0.00	0.08	0.00	0.41	1.96	0.00	0.00	0.42
Cycloalkenes ug/m3	0.07	0.00	0.00	0.00	0.00	0.15	0.00	0.00	0.06
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	6.10	0.83	0.54	2.04	0.63	5.66	1.25	1.81	2.61
Chlorinated alkanes ug/m3	2.24	0.00	1.08	1.65	0.34	1.88	1.24	2.94	3.93
Chlorinated alkenes ug/m3	0.21	0.02	0.21	0.06	0.04	0.00	0.14	0.05	0.26
Chlorinated aromatics ug/m3	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total # of compounds identified	38	19	24	27	23	44	22	25	33
Total # of peaks	89	41	42	53	53	84	49	52	55
Total area of peaks	2800.00	680.00	1010.00	1060.00	670.00	4175.00	960.00	1060.00	1370.00
Area of identified peaks	2590.00	460.00	810.00	910.00	450.00	3285.00	570.00	730.00	1040.00
Area % identified peaks	93	68	80	86	67	79	59	69	76
Toluene:Ethylbenzene	6.43			5.00		5.56			
Benzene:Ethylbenzene	4.30			13.67		3.56			
Xylenes:Ethylbenzene	3.49			3.00		3.53			
Ethylbenzene:Ethylbenzene	1.00			1.00		1.00			

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

LOCATION:Courtright
DATE: July 9/84

TIME PERIOD

COMPOUND NAME	0905-1005	1005-1105	1105-1205
ETHANE			
PROPANE	7.69	6.52	3.28
PROPADIENE			
PROPYNE			
CHLOROMETHANE	0.71		0.88
CYCLOPROPANE	0.01		0.01
ISOBUTANE	2.80	2.11	2.06
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE	6.98	4.81	5.00
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE	4.67	3.21	4.57
1-PENTENE			
PENTANE	2.56	1.86	2.80
ISOPRENE			
TRANS-2-PENTENE	0.20		0.19
DICHLOROMETHANE	0.44		0.42
2-METHYL-2-BUTENE	0.15		0.09
2-CHLORO-2-METHYLBUTANE	0.17		0.10
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE	0.21	0.16	0.19
3-METHYL-1-PENTENE			0.02
2,3-DIMETHYLBUTANE	0.39	0.26	0.39
3-METHYLPENTANE	0.77	0.56	0.79
1-HEXENE			
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE	1.53	1.24	1.49
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE	0.50	0.40	0.56
1,2-DICHLOROETHANE	2.13	1.78	2.21
1,1,1-TRICHLOROETHANE	1.09	0.75	0.86
1-CHLOROBUTANE			
BENZENE	1.38	1.06	1.39
CARBON TETRACHLORIDE			
CYCLOHEXANE	0.28	0.29	0.33
2-METHYLHEXANE	1.68	1.05	1.56
2,3-DIMETHYLPENTANE			
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE	1.10	0.75	1.18
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE		0.09	
2,2,4-TRIMETHYLPENTANE	0.43	0.22	0.34
1-HEPTENE			
HEPTANE	0.61	0.49	0.50
1-CHLORO-3-METHYLBUTANE			

TRANS-2-HEPTENE			
METHYLCYCLOHEXANE	0.39	0.36	0.31
2,5-DIMETHYLHEXANE	0.16	0.08	0.13
4-METHYLCYCLOHEXENE	0.08	0.07	0.07
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	1.68	0.67	1.14
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE		0.19	
1,2-DIBROMOETHANE			
1-OCTENE			
TRANS1,2DIMETHYLCYLOHEXANE			
TRANS-4-OCTENE			
TETRACHLOROETHYLENE	0.31	0.24	0.31
OCTANE	0.30	0.25	0.18
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE	0.13	0.09	0.06
1-CHLOROHEXANE			
ETHYLBENZENE	0.27	0.12	0.15
M-XYLENE	0.45	0.17	0.11
STYRENE			
1,4-DICHLOROBUTANE			
O-XYLENE	0.13	0.03	
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE			
1-NONENE			
NONANE	0.12	0.10	0.05
ISOPROPYLBENZENE			
2-CHLOROTOLUENE			
3-CHLOROTOLUENE			
N-PROPYLBENZENE			
4-CHLOROTOLUENE			
3-ETHYLTOLUENE			
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE			
2-ETHYLTOLUENE			
T-BUTYLBENZENE			
1,2,4-TRIMETHYLBENZENE			
1,3-DICHLOROBENZENE			
1-DECENE			
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			
DECANE			
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE			
1-ISOPROPYL-4-METHYLBENZENE			
1,2-DICHLOROBENZENE			
INDAN			
N-BUTYLCYCLOHEXANE			
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE			
1,2,3,5-TETRAMETHYLBENZENE			
DIISOPROPYLBENZENE			
1,2,3,4-TETRAMETHYLBENZENE			
TETRALIN			
DODECANE			

Total hydrocarbons ug/m3:	42.50	29.98	33.72
Alkanes ug/m3	32.00	23.86	24.51
Cycloalkanes ug/m3	1.31	1.14	1.27
Alkenes ug/m3	0.35	0.00	0.30
Cycloalkenes ug/m3	0.08	0.07	0.07
Alkynes ug/m3	0.00	0.00	0.00
Aromatics ug/m3	3.91	2.05	2.79
Chlorinated alkanes ug/m3	4.54	2.53	4.47
Chlorinated alkenes ug/m3	0.31	0.33	0.31
Chlorinated aromatics ug/m3	0.00	0.00	0.00
Total # of compounds identified	35	31	35
Total # of peaks	68	57	63
Total area of peaks	2920.00	1900.00	1975.00
Area of identified peaks	1880.00	1350.00	1455.00
Area % identified peaks	64	71	74
Toluene:Ethylbenzene	6.22	5.58	7.60
Benzene:Ethylbenzene	5.11	8.83	9.27
Xylenes:Ethylbenzene	2.15	1.67	0.73
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

LOCATION: Courtright
DATE: July 13/84

TIME PERIOD

COMPOUND NAME	0849-0949	0949-1049	1049-1149	1149-1249	1249-1349	1349-1449	1449-1549	1549-1649	1649-1749
ETHANE									
PROPANE	60.38	14.69	4.77	2.87	2.79	3.23	2.97	3.66	2.93
PROPADIENE									
PROPYNE									
CHLOROMETHANE		0.92	0.71	0.66	0.75	0.93	1.03	0.83	1.20
CYCLOPROPANE					0.02		0.01		
ISOBUTANE	12.18	9.29	2.81	1.99	2.28	2.74	2.60	1.91	1.41
VINYL CHLORIDE									
1-BUTENE									
1,3-BUTADIENE									
BUTANE	17.05	10.97	8.68	4.99	6.29	8.75	9.13	6.53	4.19
1-BUTYNE									
CHLOROETHANE									
3-METHYL-1-BUTENE									
2-METHYLBUTANE	12.92	8.70	4.75	5.80	6.59	8.99	7.88	6.19	3.58
1-PENTENE	0.16								
PENTANE	7.02	4.02	2.35	3.02	3.36	4.27	3.38	2.92	1.71
ISOPRENE	0.84	1.87	0.57						
TRANS-2-PENTENE	0.55		0.29	0.32		0.30	0.32		
DICHLOROMETHANE	0.32			0.51		1.31	1.76	1.21	1.03
2-METHYL-2-BUTENE	0.42		0.19	0.19		0.27	0.32		
2-CHLORO-2-METHYLBUTANE	0.46		0.21	0.21		0.30	0.36	0.08	
3-CHLOROPROPENE									
2,2-DIMETHYLBUTANE	0.56	0.33	0.16	0.18		0.36	0.32	0.24	0.18
3-METHYL-1-PENTENE	0.04								
2,3-DIMETHYLBUTANE	1.28	0.57	0.38	0.45	0.52	0.86	0.59	0.51	0.28
3-METHYLPENTANE	2.74	1.22	0.72	0.95	1.08	1.78	1.14	1.05	0.58
1-HEXENE	0.03								
CIS-1,2-DICHLOROETHYLENE									
2-CHLOROBUTANE									
HEXANE	4.58	2.18	1.27	1.63	1.51	2.56	1.67	1.66	0.87
CHLOROFORM									
TRANS-3-HEXENE	0.11	0.05	0.04	0.04	0.04	0.04	0.04		
3-CHLORO-2-METHYLPROPENE									
METYHYLCYCLOPENTANE	1.68	0.68	0.44	0.62	0.63	0.96	0.60	0.53	0.28
1,2-DICHLOROETHANE	1.80	1.35	0.88	0.68	1.38	1.75	1.68	1.58	1.47
1,1,1-TRICHLOROETHANE	1.65	0.77	1.22	0.83	1.15	1.12	1.75	1.14	0.95
1-CHLOROBUTANE									
BENZENE	3.56	1.93	1.67	1.88	2.56	3.07	3.27	3.06	2.16
CARBON TETRACHLORIDE									
CYCLOHEXANE	0.75	0.34	0.20	0.22		0.29			
2-METHYLHEXANE	5.72	2.23	1.25	1.78	2.01	3.59	2.18	2.04	1.01
2,3-DIMETHYLPENTANE			0.56						
CYCLOHEXENE									
DIBROMOMETHANE									
3-METHYLHEXANE	3.91	1.50	1.01	1.31	1.42	2.64	1.55	1.41	0.71
1,2-DICHLOROPROPANE									
2,3-DICHLOROPROPANE	0.59								
TRICHLOROETHYLENE			0.09	0.12	0.12		0.10	0.09	0.05
2,2,4-TRIMETHYLPENTANE	1.04	0.39	0.31	0.32	0.45	0.91	0.69	0.60	0.30
1-HEPTENE									
HEPTANE	1.81	0.82	0.47	0.56	0.53	0.99	0.64	0.58	0.27
1-CHLORO-3-METHYLBUTANE	0.08								
TRANS-2-HEPTENE	0.11								

METHYLCYCLOHEXANE	1.05	0.44	0.26	0.30	0.29	0.53	0.30	0.26	0.15
2,5-DIMETHYLHEXANE	0.48	0.20	0.12	0.14	0.17	0.33	0.18	0.15	0.08
4-METHYLCYCLOHEXENE	0.24	0.10	0.06	0.07	0.08	0.15	0.08	0.07	
1-CHLOROPENTANE									
1,1,2-TRICHLOROETHANE									
TOLUENE	7.14	2.55	1.46	1.61	1.97	3.25	1.89	0.70	0.19
1,3-DICHLOROPROPANE									
2-METHYLHEPTANE	0.64		0.16	0.21				0.21	
1,2-DIBROMOETHANE									
1-OCTENE	0.09					0.08			
TRANS1,2DIMETHYLCYLOHEXANE	0.09					0.05			
TRANS-4-OCTENE	0.11								
TETRACHLOROETHYLENE	0.37	0.23	0.15	0.19	0.40	0.65	1.51	0.99	0.31
OCTANE	0.66	0.37	0.20	0.22	0.22	0.39	0.25	0.20	
2-METHYL-1-HEPTENE	0.05								
2-OCTENE									
CIS-1,2-DIMETHYLCYCLOHEXANE						0.07			
CHLOROBENZENE	0.17								
PROPYLCYCLOPENTANE									
ETHYLCYCLOHEXANE	0.26	0.13	0.06	0.09	0.10	0.18	0.10		
1-CHLOROHEXANE									
ETHYLBENZENE	0.99	0.41	0.30	0.25	0.25	0.34			
M-XYLENE	2.09	0.83	0.39	0.27	0.18	0.27			
STYRENE									
1,4-DICHLOROBUTANE									
O-XYLENE	0.65	0.27	0.12	0.08	0.04	0.06			
1,1,2,2-TETRACHLOROETHANE									
1,2,3-TRICHLOROPROPANE									
1-NONENE									
NONANE	0.38	0.15	0.07	0.07	0.09	0.12	0.07	0.04	
ISOPROPYLBENZENE	0.14								
2-CHLOROTOLUENE									
3-CHLOROTOLUENE									
N-PROPYLBENZENE	0.25	0.08							
4-CHLOROTOLUENE									
3-ETHYLTOLUENE	0.76		0.13	0.02					
4-ETHYLTOLUENE	0.37								
1,3,5-TRIMETHYLBENZENE	0.25	0.06							
2-ETHYLTOLUENE	0.29	0.09	0.05						
T-BUTYLBENZENE		0.26							
1,2,4-TRIMETHYLBENZENE	0.68	0.18							
1,3-DICHLOROBENZENE	0.12								
1-DECENE	0.04								
A-CHLOROTOLUENE									
1,5-DICHLOROPENTANE	0.11								
DECANE	0.54	0.15							
SEC.BUTYLBENZENE									
3-(CHLOROMETHYL)-HEPTANE									
1,2,3-TRIMETHYLBENZENE	0.17								
1-ISOPROPYL-4-METHYLBENZENE	0.12								
1,2-DICHLOROBENZENE									
INDAN	0.08								
N-BUTYLCYCLOHEXANE	0.04								
1,3-DIETHYLBENZENE	0.06								
1,4-DIETHYLBENZENE									
N-BUTYLBENZENE									
1,2-DIETHYLBENZENE									
DECALIN									
UNDECANE	0.22								
1,2,3,5-TETRAMETHYLBENZENE									
DIISOPROPYLBENZENE									
1,2,3,4-TETRAMETHYLBENZENE									
TETRALIN									
DODECANE									

Total hydrocarbons ug/m3:	164.04	71.32	39.53	35.65	39.27	58.48	50.36	40.44	25.89
Alkanes ug/m3	134.11	57.78	30.04	26.49	29.31	42.51	35.24	29.90	18.10
Cycloalkanes ug/m3	3.87	1.59	0.96	1.23	1.04	2.08	1.01	0.79	0.43
Alkenes ug/m3	2.55	1.92	1.09	0.55	0.04	0.69	0.68	0.00	0.00
Cycloalkenes ug/m3	0.24	0.10	0.06	0.07	0.08	0.15	0.08	0.07	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	17.60	6.66	4.12	4.11	5.00	6.99	5.16	3.76	2.35
Chlorinated alkanes ug/m3	4.42	3.04	3.02	2.89	3.28	5.41	6.58	4.84	4.65
Chlorinated alkenes ug/m3	0.96	0.23	0.24	0.31	0.52	0.65	1.61	1.08	0.36
Chlorinated aromatics ug/m3	0.29	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Total # of compounds identified	64	38	40	38	31	38	33	29	24
Total # of peaks	155	81	85	78	73	75	69	59	55
Total area of peaks	9975.00	4210.00	2300.00	2235.00	2555.00	3360.00	2730.00	2225.00	1540.00
Area of identified peaks	7575.00	3260.00	1800.00	1575.00	1815.00	2600.00	2180.00	1815.00	1110.00
Area % identified peaks	76	77	78	70	71	77	80	82	72
Toluene:Ethylbenzene	7.21	6.22	4.87	6.44	7.88	9.56			
Benzene:Ethylbenzene	3.60	4.71	5.57	7.52	10.24	9.03			
Xylenes:Ethylbenzene	2.77	2.68	1.70	1.40	0.88	0.97			
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00	1.00	1.00			

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

LOCATION: Courtright
DATE: July 14/84

TIME PERIOD

COMPOUND NAME	0854-0954	0954-1054	1054-1154	1154-1254	1445-1545
ETHANE					
PROPANE	8.07	12.94	7.34	6.04	3.12
PROPADIENE	0.09	0.07	0.05	0.03	
PROPYNE		0.21			
CHLOROMETHANE		0.72	0.29	0.70	0.91
CYCLOPROPANE		0.02		0.02	0.04
ISOBUTANE	8.66	8.16	5.09	3.52	3.17
VINYL CHLORIDE					
1-BUTENE					
1,3-BUTADIENE			0.05		
BUTANE	28.17	25.07	14.68	12.13	11.50
1-BUTYNE					
CHLOROETHANE					
3-METHYL-1-BUTENE					
2-METHYLBUTANE	28.90	22.08	12.90	9.35	8.51
1-PENTENE					
PENTANE	11.57	8.92	5.41	3.75	3.47
ISOPRENE	3.21	2.41			
TRANS-2-PENTENE		0.40		0.26	
DICHLOROMETHANE	4.17	2.75		1.52	1.49
2-METHYL-2-BUTENE	1.14	0.68	0.38	0.28	
2-CHLORO-2-METHYLBUTANE	0.71	0.75	0.42	0.31	
3-CHLOROPROPENE					
2,2-DIMETHYLBUTANE	0.77	0.60	0.42	0.30	0.28
3-METHYL-1-PENTENE					
2,3-DIMETHYLBUTANE	2.50	1.79	1.02	0.69	0.60
3-METHYLPENTANE	4.53	3.29	2.00	1.32	1.17
1-HEXENE	0.12	0.06			
CIS-1,2-DICHLOROETHYLENE					
2-CHLOROBUTANE					
HEXANE	6.72	5.02	3.04	2.02	1.74
CHLOROFORM					
TRANS-3-HEXENE	0.11	0.06	0.06		
3-CHLORO-2-METHYLPROPENE					
METYHYLCYCLOPENTANE	2.94	2.15	1.19	0.78	0.63
1,2-DICHLOROETHANE	2.08	1.37	0.89	0.93	1.02
1,1,1-TRICHLOROETHANE	4.17	2.43	1.98	1.51	1.55
1-CHLOROBUTANE					
BENZENE	7.42	4.71	2.56	2.44	3.65
CARBON TETRACHLORIDE					
CYCLOHEXANE				0.28	
2-METHYLHEXANE	10.41	7.09	4.15	2.63	2.29
2,3-DIMETHYLPENTANE					
CYCLOHEXENE	0.07				
DIBROMOMETHANE					
3-METHYLHEXANE	6.68	4.64	2.80	1.73	1.54
1,2-DICHLOROPROPANE					
2,3-DICHLOROPROPANE					
TRICHLOROETHYLENE	0.62	0.42	0.24		0.11
2,2,4-TRIMETHYLPENTANE	2.81	1.88	1.08	0.79	0.69
1-HEPTENE					
HEPTANE	3.04	2.07	1.22	0.73	0.64
1-CHLORO-3-METHYLBUTANE					

TRANS-2-HEPTENE	0.12	0.07	0.04		
METHYLCYCLOHEXANE	1.78	1.21	0.66	0.40	0.35
2,5-DIMETHYLHEXANE	1.10	0.70	0.39	0.25	0.17
4-METHYLCYCLOHEXENE	0.44	0.29	0.17	0.10	0.08
1-CHLOROPENTANE					
1,1,2-TRICHLOROETHANE					
TOLUENE	15.09	10.20	4.84	3.22	0.53
1,3-DICHLOROPROPANE					
2-METHYLHEPTANE					0.21
1,2-DIBROMOETHANE					
1-OCTENE	0.20	0.13	0.08		
TRANS1,2DIMETHYLCYLOHEXANE	0.23	0.15	0.07		
TRANS-4-OCTENE					
TETRACHLOROETHYLENE	1.65	1.11	0.67	0.84	0.66
OCTANE	1.51	0.94	0.50	0.30	0.20
2-METHYL-1-HEPTENE					
2-OCTENE					
CIS-1,2-DIMETHYLCYCLOHEXANE	0.31		0.10		
CHLOROBENZENE					
PROPYLCYCLOPENTANE					
ETHYLCYCLOHEXANE	0.72	0.46	0.23	0.13	0.08
1-CHLOROHEXANE					
ETHYLBENZENE	2.61	1.60	0.70	0.31	
M-XYLENE	6.57	3.19	0.66	0.19	
STYRENE					
1,4-DICHLOROBUTANE	0.10				
O-XYLENE	2.02	1.04	0.23	0.05	
1,1,2,2-TETRACHLOROETHANE					
1,2,3-TRICHLOROPROPANE		0.84			
1-NONENE					
NONANE	0.80	0.47	0.18	0.11	0.05
ISOPROPYLBENZENE	0.33	0.20			
2-CHLOROTOLUENE					
3-CHLOROTOLUENE					
N-PROPYLBENZENE		0.34			
4-CHLOROTOLUENE					
3-ETHYLTOLUENE	2.20	1.17	0.15		
4-ETHYLTOLUENE					
1,3,5-TRIMETHYLBENZENE	0.47	0.17	0.05		
2-ETHYLTOLUENE	0.96	0.44			
T-BUTYLBENZENE					
1,2,4-TRIMETHYLBENZENE	1.57	0.36			
1,3-DICHLOROBENZENE	0.29	0.12			
1-DECENE	0.17				
A-CHLOROTOLUENE					
1,5-DICHLOROPENTANE	0.67	0.32			
DECANE	0.99	0.48			
SEC.BUTYLBENZENE					
3-(CHLOROMETHYL)-HEPTANE					
1,2,3-TRIMETHYLBENZENE					
1-ISOPROPYL-4-METHYLBENZENE	0.35				
1,2-DICHLOROBENZENE	0.27	0.05			
INDAN	0.25	0.08			
N-BUTYLCYCLOHEXANE	0.34	0.11	0.03		
1,3-DIETHYLBENZENE					
1,4-DIETHYLBENZENE					
N-BUTYLBENZENE					
1,2-DIETHYLBENZENE					
DECALIN					
UNDECANE	0.63				
1,2,3,5-TETRAMETHYLBENZENE					
DIISOPROPYLBENZENE					
1,2,3,4-TETRAMETHYLBENZENE					
TETRALIN					
DODECANE					

Total hydrocarbons ug/m3:	194.42	149.00	79.01	59.96	50.45
Alkanes ug/m3	127.86	106.14	62.22	45.66	39.35
Cycloalkanes ug/m3	6.32	4.10	2.28	1.61	1.10
Alkenes ug/m3	5.16	3.88	0.66	0.57	0.00
Cycloalkenes ug/m3	0.51	0.29	0.17	0.10	0.08
Alkynes ug/m3	0.00	0.21	0.00	0.00	0.00
Aromatics ug/m3	39.84	23.50	9.19	6.21	4.18
Chlorinated alkanes ug/m3	11.90	9.18	3.58	4.97	4.97
Chlorinated alkenes ug/m3	2.27	1.53	0.91	0.84	0.77
Chlorinated aromatics ug/m3	0.56	0.17	0.00	0.00	0.00
Total # of compounds identified	56	56	42	36	30
Total # of peaks	170	126	98	69	63
Total area of peaks	11850.00	8180.00	4700.00	3170.00	2750.00
Area of identified peaks	8900.00	6730.00	3600.00	2650.00	2250.00
Area % identified peaks	75	82	77	84	82
Toluene:Ethylbenzene	5.78	6.38	6.91	10.39	
Benzene:Ethylbenzene	2.84	2.94	3.66	7.87	
Xylenes:Ethylbenzene	3.29	2.64	1.27	0.77	
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00	

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

LOCATION: Courtright
DATE: July 16/84

TIME PERIOD

COMPOUND NAME	0931-1031	1031-1131	1131-1231	1231-1331
ETHANE				
PROPANE	2.15	7.21	1.41	1.93
PROPADIENE				
PROPYNE				
CHLOROMETHANE	0.62	0.78	0.38	0.29
CYCLOPROPANE	0.01			0.01
ISOBUTANE	0.97	1.02	0.51	0.72
VINYL CHLORIDE				
1-BUTENE				
1,3-BUTADIENE				
BUTANE	2.93	2.91	1.57	2.02
1-BUTYNE				
CHLOROETHANE				
3-METHYL-1-BUTENE				
2-METHYLBUTANE	2.77	2.14	1.24	1.95
1-PENTENE		0.17		0.16
PENTANE	1.32	0.97	0.60	1.02
ISOPRENE	0.75	0.76		0.90
TRANS-2-PENTENE	0.19	0.17		0.21
DICHLOROMETHANE	0.27	0.50		
2-METHYL-2-BUTENE	0.17	0.12		0.12
2-CHLORO-2-METHYLBUTANE	0.18	0.13		0.14
3-CHLOROPROPENE		0.06		
2,2-DIMETHYLBUTANE	0.11	0.05		0.04
3-METHYL-1-PENTENE				
2,3-DIMETHYLBUTANE	0.26	0.16	0.09	0.14
3-METHYLPENTANE	0.52	0.30	0.17	0.27
1-HEXENE				
CIS-1,2-DICHLOROETHYLENE				
2-CHLOROBUTANE				
HEXANE	0.86	0.50	0.29	0.40
CHLOROFORM				
TRANS-3-HEXENE	0.03			
3-CHLORO-2-METHYLPROPENE				
METYHYLCYCLOPENTANE	0.35	0.19	0.10	0.15
1,2-DICHLOROETHANE	0.74			
1,1,1-TRICHLOROETHANE	0.58	0.84	0.29	0.61
1-CHLOROBUTANE				
BENZENE	1.15	2.41	1.03	1.42
CARBON TETRACHLORIDE				
CYCLOHEXANE				0.08
2-METHYLHEXANE	1.19	0.56	0.30	0.38
2,3-DIMETHYLPENTANE		0.30	0.16	
CYCLOHEXENE				
DIBROMOMETHANE				
3-METHYLHEXANE	0.82	0.39	0.20	0.27
1,2-DICHLOROPROPANE				
2,3-DICHLOROPROPANE				
TRICHLOROETHYLENE	0.08	0.04		
2,2,4-TRIMETHYLPENTANE	0.30	0.14	0.07	0.10
1-HEPTENE				
HEPTANE	0.40	0.20	0.10	0.11
1-CHLORO-3-METHYLBUTANE				

TRANS-2-HEPTENE				
METHYLCYCLOHEXANE	0.22	0.11	0.06	0.06
2,5-DIMETHYLHEXANE	0.11			
4-METHYLCYCLOHEXENE	0.05			
1-CHLOROPENTANE				
1,1,2-TRICHLOROETHANE				
TOLUENE	1.96	0.73	0.50	0.46
1,3-DICHLOROPROPANE				
2-METHYLHEPTANE				
1,2-DIBROMOETHANE				
1-OCTENE				
TRANS1,2DIMETHYLCYLOHEXANE				
TRANS-4-OCTENE				
TETRACHLOROETHYLENE	0.21	0.14	0.09	0.10
OCTANE	0.18	0.07	0.04	0.04
2-METHYL-1-HEPTENE				
2-OCTENE				
CIS-1,2-DIMETHYLCYCLOHEXANE				
CHLOROBENZENE				
PROPYLCYCLOPENTANE				
ETHYLCYCLOHEXANE	0.07			
1-CHLOROHEXANE				
ETHYLBENZENE	0.22	0.11		0.07
M-XYLENE	0.54	0.20		0.11
STYRENE				
1,4-DICHLOROBUTANE				
O-XYLENE	0.17	0.05		0.03
1,1,2,2-TETRACHLOROETHANE				
1,2,3-TRICHLOROPROPANE				
1-NONENE				
NONANE	0.07	0.02	0.02	0.02
ISOPROPYLBENZENE				
2-CHLOROTOLUENE				
3-CHLOROTOLUENE				
N-PROPYLBENZENE				
4-CHLOROTOLUENE				
3-ETHYLTOLUENE	0.16			
4-ETHYLTOLUENE				
1,3,5-TRIMETHYLBENZENE				
2-ETHYLTOLUENE				
T-BUTYLBENZENE				
1,2,4-TRIMETHYLBENZENE				
1,3-DICHLOROBENZENE				
1=DECENE				
A-CHLOROTOLUENE				
1,5-DICHLOROPENTANE				
DECANE				
SEC.BUTYLBENZENE				
3-(CHLOROMETHYL)-HEPTANE				
1,2,3-TRIMETHYLBENZENE				
1-ISOPROPYL-4-METHYLBENZENE				
1,2-DICHLOROBENZENE				
INDAN				
N-BUTYLCYCLOHEXANE				
1,3-DIETHYLBENZENE				
1,4-DIETHYLBENZENE				
N-BUTYLBENZENE				
1,2-DIETHYLBENZENE				
DECALIN				
UNDECANE				
1,2,3,5-TETRAMETHYLBENZENE				
DIISOPROPYLBENZENE				
1,2,3,4-TETRAMETHYLBENZENE				
TETRALIN				
DODECANE				

Total hydrocarbons ug/m3:	23.67	24.45	9.22	14.33
Alkanes ug/m3	14.95	16.94	6.77	9.41
Cycloalkanes ug/m3	0.65	0.30	0.16	0.30
Alkenes ug/m3	1.14	1.22	0.00	1.39
Cycloalkenes ug/m3	0.05	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00
Aromatics ug/m3	4.20	3.50	1.53	2.09
Chlorinated alkanes ug/m3	2.39	2.25	0.67	1.04
Chlorinated alkenes ug/m3	0.29	0.24	0.09	0.10
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00
Total # of compounds identified	38	34	22	32
Total # of peaks	68	59	57	64
Total area of peaks	1420.00	1260.00	660.00	940.00
Area of identified peaks	1070.00	1050.00	420.00	640.00
Area % identified peaks	75	83	64	68
Toluene:Ethylbenzene	8.91	6.64		6.57
Benzene:Ethylbenzene	5.23	21.91		20.29
Xylenes:Ethylbenzene	3.23	2.27		2.00
Ethylbenzene:Ethylbenzene	1.00	1.00		1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

LOCATION:Courtright
DATE: July 17/84

units ug/m3

TIME PERIOD

COMPOUND NAME	0910-1010	1010-1110	1110-1210
ETHANE			
PROPANE	6.19	4.41	4.02
PROPADIENE		0.03	
PROPYNE		0.10	
CHLOROMETHANE		0.64	
CYCLOPROPANE			0.30
ISOBUTANE	4.74	2.44	3.01
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE	13.08	7.51	9.11
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE		0.07	0.07
2-METHYLBUTANE	12.38	7.37	8.49
1-PENTENE		0.12	0.27
PENTANE	5.14	3.19	3.48
ISOPRENE		1.60	1.59
TRANS-2-PENTENE		0.35	0.29
DICHLOROMETHANE		1.35	
2-METHYL-2-BUTENE	0.61	0.34	0.40
2-CHLORO-2-METHYLBUTANE	0.66	0.38	0.44
3-CHLOROPROPENE			0.31
2,2-DIMETHYLBUTANE	0.35	0.25	0.27
3-METHYL-1-PENTENE		0.03	0.04
2,3-DIMETHYLBUTANE	1.06	0.65	0.72
3-METHYLPENTANE	2.03	1.29	1.41
1-HEXENE			0.06
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE	3.20	2.01	2.21
CHLOROFORM			
TRANS-3-HEXENE		0.04	0.04
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE	1.32	0.81	0.87
1,2-DICHLOROETHANE	1.30	0.94	.0.87
1,1,1-TRICHLOROETHANE	3.08	1.30	2.23
1-CHLOROBUTANE			
BENZENE	8.30	2.99	3.21
CARBON TETRACHLORIDE			
CYCLOHEXANE	0.40		0.31
2-METHYLHEXANE	2.66	2.64	2.86
2,3-DIMETHYLPENTANE	1.50		
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE	3.03	1.81	1.90
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE	0.31	0.16	
2,2,4-TRIMETHYLPENTANE	1.25	0.66	0.61
1-HEPTENE			
HEPTANE	1.63	0.85	0.89
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			

METHYLCYCLOHEXANE	1.03	0.54	0.56
2,5-DIMETHYLHEXANE	0.55	0.26	0.29
4-METHYLCYCLOHEXENE		0.14	0.15
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	7.90	5.04	6.35
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE	0.58		
1,2-DIBROMOETHANE			
1-OCTENE		0.10	0.08
TRANS1,2DIMETHYLCYLOHEXANE		0.14	0.13
TRANS-4-OCTENE			0.15
TETRACHLOROETHYLENE	1.90	1.28	1.71
OCTANE	0.99	0.54	0.56
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE		0.10	
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE	0.50	0.29	0.37
1-CHLOROHEXANE			
ETHYLBENZENE	1.41	0.80	0.89
M-XYLENE	3.95	1.93	2.24
STYRENE			
1,4-DICHLOROBUTANE		0.04	0.06
O-XYLENE	1.19	0.54	0.64
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE			0.63
1-NONENE			
NONANE	0.50	0.27	0.34
ISOPROPYLBENZENE			0.13
2-CHLOROTOLUENE			0.15
3-CHLOROTOLUENE			
N-PROPYLBENZENE			
4-CHLOROTOLUENE			
3-ETHYLTOLUENE	1.35	0.79	0.67
4-ETHYLTOLUENE	0.57		
1,3,5-TRIMETHYLBENZENE			0.20
2-ETHYLTOLUENE	0.54	0.26	0.30
T-BUTYLBENZENE			
1,2,4-TRIMETHYLBENZENE	1.24	0.48	0.52
1,3-DICHLOROBENZENE			0.04
1-DECENE			
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			
DECANE	0.52	0.32	0.36
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE			
1-ISOPROPYL-4-METHYLBENZENE			
1,2-DICHLOROBENZENE		0.07	0.04
INDAN			0.07
N-BUTYLCYCLOHEXANE		0.04	0.06
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE	0.33		
1,2,3,5-TETRAMETHYLBENZENE			
DIISOPROPYLBENZENE			
1,2,3,4-TETRAMETHYLBENZENE			
TETRALIN			
DODECANE			

Total hydrocarbons ug/m3:	99.27	60.30	67.97
Alkanes ug/m3	61.71	36.47	40.53
Cycloalkanes ug/m3	3.25	1.92	2.60
Alkenes ug/m3	0.61	2.68	2.99
Cycloalkenes ug/m3	0.00	0.14	0.15
Alkynes ug/m3	0.00	0.10	0.00
Aromatics ug/m3	26.45	12.83	15.22
Chlorinated alkanes ug/m3	5.04	4.65	4.23
Chlorinated alkenes ug/m3	2.21	1.44	2.02
Chlorinated aromatics ug/m3	0.00	0.07	0.23
Total # of compounds identified	39	51	56
Total # of peaks	61	114	114
Total area of peaks	5800.00	3520.00	3935.00
Area of identified peaks	4700.00	2600.00	2935.00
Area % identified peaks	81	74	75
Toluene:Ethylbenzene	5.60	6.30	7.13
Benzene:Ethylbenzene	5.89	3.74	3.61
Xylenes:Ethylbenzene	3.65	3.09	3.24
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00

SARNIA OXIDANT STUDY -- June and July, 1984

GAS CHROMATOGRAPHIC DATA.....Airplane Samples

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JUNE 27/84

TIME PERIOD

COMPOUND NAME	1543-1620	1450-1528
PROPANE		
PROPADIENE		
PROPYNE		
CHLOROMETHANE		
CYCLOPROPANE		
ISOBUTANE		
VINYL CHLORIDE		
1-BUTENE		
1,3-BUTADIENE		
BUTANE	1.09	
1-BUTYNE		
CHLOROETHANE		
3-METHYL-1-BUTENE		
2-METHYLBUTANE	0.82	
1-PENTENE		
PENTANE		
ISOPRENE		
TRANS-2-PENTENE		
DICHLOROMETHANE		
2-METHYL-2-BUTENE		
2-CHLORO-2-METHYLBUTANE		
3-CHLOROPROPENE		
2,2-DIMETHYLBUTANE		
3-METHYL-1-PENTENE		
2,3-DIMETHYLBUTANE		
3-METHYLPENTANE		
1-HEXENE		
CIS-1,2-DICHLOROETHYLENE		
2-CHLOROBUTANE		
HEXANE		
CHLOROFORM		
TRANS-3-HEXENE		
3-CHLORO-2-METHYLPROPENE		
METYHYLCYCLOPENTANE		
1,2-DICHLOROETHANE		
1,1,1-TRICHLOROETHANE		
1-CHLOROBUTANE		
BENZENE	5.19	4.86
CARBON TETRACHLORIDE		
CYCLOHEXANE		
2-METHYLHEXANE		
2,3-DIMETHYLPENTANE		
CYCLOHEXENE		
DIBROMOMETHANE		
3-METHYLHEXANE		
1,2-DICHLOROPROPANE		
2,3-DICHLOROPROPANE		
TRICHLOROETHYLENE		
2,2,4-TRIMETHYLPENTANE		
1-HEPTENE		
HEPTANE		
1-CHLORO-3-METHYLBUTANE		

TRANS-2-HEPTENE		
METHYLCYCLOHEXANE		
2,5-DIMETHYLHEXANE		
4-METHYLCYCLOHEXENE		
1-CHLOROPENTANE		
1,1,2-TRICHLOROETHANE		
TOLUENE	1.83	1.99
1,3-DICHLOROPROPANE		
2-METHYLHEPTANE		
1,2-DIBROMOETHANE		
1-OCTENE		
TRANS1,2DIMETHYLCYLOHEXANE		
TRANS-4-OCTENE		
TETRACHLOROETHYLENE		
OCTANE		
2-METHYL-1-HEPTENE		
2-OCTENE		
CIS-1,2-DIMETHYLCYCLOHEXANE		
CHLOROBENZENE		
PROPYLCYCLOPENTANE		
ETHYLCYCLOHEXANE		
1-CHLOROHEXANE		
ETHYLBENZENE	7.22	8.10
M-XYLENE	33.52	37.58
STYRENE		
1,4-DICHLOROBUTANE		
O-XYLENE	31.12	36.34
1,1,2,2-TETRACHLOROETHANE		
1,2,3-TRICHLOROPROPANE		
1-NONENE		
NONANE	2.95	2.73
ISOPROPYLBENZENE	3.83	4.74
2-CHLOROTOLUENE		
3-CHLOROTOLUENE		
N-PROPYLBENZENE		
4-CHLOROTOLUENE		
3-ETHYLTOLUENE		
4-ETHYLTOLUENE		
1,3,5-TRIMETHYLBENZENE		
2-ETHYLTOLUENE		
T-BUTYLBENZENE		1.07
1,2,4-TRIMETHYLBENZENE		1.87
1,3-DICHLOROBENZENE		
1-DECENE		
A-CHLOROTOLUENE		
1,5-DICHLOROPENTANE		
DECANE	4.08	3.38
SEC.BUTYLBENZENE		
3-(CHLOROMETHYL)-HEPTANE		
1,2,3-TRIMETHYLBENZENE		
1-ISOPROPYL-4-METHYLBENZENE		
1,2-DICHLOROBENZENE		
INDAN		
N-BUTYLCYCLOHEXANE		
1,3-DIETHYLBENZENE		
1,4-DIETHYLBENZENE		
N-BUTYLBENZENE		
1,2-DIETHYLBENZENE		
DECALIN		
UNDECANE	9.63	10.66
1,2,3,5-TETRAMETHYLBENZENE		
DIISOPROPYLBENZENE		
1,2,3,4-TETRAMETHYLBENZENE		
TETRALIN		
DODECANE	19.19	20.97

Total hydrocarbons ug/m3:	120.47	134.29
Alkanes ug/m3	37.76	37.74
Cycloalkanes ug/m3	0.00	0.00
Alkenes ug/m3	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00
Alkynes ug/m3	0.00	0.00
Aromatics ug/m3	82.71	96.55
Chlorinated alkanes ug/m3	0.00	0.00
Chlorinated alkenes ug/m3	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00
Total # of compounds identified	12	12
Total # of peaks	32	29
Total area of peaks	3006.88	2733.34
Area of identified peaks	1953.73	2076.98
Area % identified peaks	65	76
Toluene:Ethylbenzene	0.25	0.25
Benzene:Ethylbenzene	0.72	0.60
Xylenes:Ethylbenzene	8.95	9.13
Ethylbenzene:Ethylbenzene	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JUNE 28/84

TIME PERIOD

COMPOUND NAME	1228-1258	1324-1352
PROPANE		
PROPADIENE		
PROPYNE		
CHLOROMETHANE		
CYCLOPROPANE		
ISOBUTANE		
VINYL CHLORIDE		
1-BUTENE		
1,3-BUTADIENE		
BUTANE		
1-BUTYNE		
CHLOROETHANE		
3-METHYL-1-BUTENE		
2-METHYLBUTANE		
1-PENTENE		
PENTANE		
ISOPRENE		
TRANS-2-PENTENE		
DICHLOROMETHANE		
2-METHYL-2-BUTENE		
2-CHLORO-2-METHYLBUTANE		
3-CHLOROPROPENE		
2,2-DIMETHYLBUTANE		
3-METHYL-1-PENTENE		
2,3-DIMETHYLBUTANE		
3-METHYLPENTANE		
1-HEXENE		
CIS-1,2-DICHLOROETHYLENE		
2-CHLOROBUTANE		
HEXANE		
CHLOROFORM		
TRANS-3-HEXENE		
3-CHLORO-2-METHYLPROPENE		
METYHYLCYCLOPENTANE		
1,2-DICHLOROETHANE		
1,1,1-TRICHLOROETHANE		
1-CHLOROBUTANE		
BENZENE	6.90	1.31
CARBON TETRACHLORIDE		
CYCLOHEXANE		
2-METHYLHEXANE		
2,3-DIMETHYLPENTANE		
CYCLOHEXENE		
DIBROMOMETHANE		
3-METHYLHEXANE		
1,2-DICHLOROPROPANE		
2,3-DICHLOROPROPANE		
TRICHLOROETHYLENE		
2,2,4-TRIMETHYLPENTANE		
1-HEPTENE		
HEPTANE		
1-CHLORO-3-METHYLBUTANE		
TRANS-2-HEPTENE		

METHYLCYCLOHEXANE		
2,5-DIMETHYLHEXANE		
4-METHYLCYCLOHEXENE		
1-CHLOROPENTANE		
1,1,2-TRICHLOROETHANE		
TOLUENE	0.62	
1,3-DICHLOROPROPANE		
2-METHYLHEPTANE		
1,2-DIBROMOETHANE		
1-OCTENE		
TRANS1,2DIMETHYLCYLOHEXANE		
TRANS-4-OCTENE		
TETRACHLOROETHYLENE		
OCTANE		
2-METHYL-1-HEPTENE		
2-OCTENE		
CIS-1,2-DIMETHYLCYCLOHEXANE		
CHLOROBENZENE		
PROPYLCYCLOPENTANE		
ETHYLCYCLOHEXANE		
1-CHLOROHEXANE		
ETHYLBENZENE	0.73	0.37
M-XYLENE	4.62	2.36
STYRENE		
1,4-DICHLOROBUTANE		
O-XYLENE	4.26	2.41
1,1,2,2-TETRACHLOROETHANE		
1,2,3-TRICHLOROPROPANE		
1-NONENE		
NONANE	0.81	
ISOPROPYLBENZENE		
2-CHLOROTOLUENE		
3-CHLOROTOLUENE		
N-PROPYLBENZENE		
4-CHLOROTOLUENE		
3-ETHYLTOLUENE		
4-ETHYLTOLUENE		
1,3,5-TRIMETHYLBENZENE		
2-ETHYLTOLUENE		
T-BUTYLBENZENE		
1,2,4-TRIMETHYLBENZENE		
1,3-DICHLOROBENZENE		
1-DECENE		
A-CHLOROTOLUENE		
1,5-DICHLOROPENTANE		
DECANE	1.36	
SEC.BUTYLBENZENE		
3-(CHLOROMETHYL)-HEPTANE		
1,2,3-TRIMETHYLBENZENE		
1-ISOPROPYL-4-METHYLBENZENE		
1,2-DICHLOROBENZENE		
INDAN		
N-BUTYLCYCLOHEXANE		
1,3-DIETHYLBENZENE		
1,4-DIETHYLBENZENE		
N-BUTYLBENZENE		
1,2-DIETHYLBENZENE		
DECALIN		
UNDECANE	3.51	
1,2,3,5-TETRAMETHYLBENZENE		
DIISOPROPYLBENZENE		
1,2,3,4-TETRAMETHYLBENZENE		
TETRALIN		
DODECANE	8.81	1.18

Total hydrocarbons ug/m3:	31.62	7.63
Alkanes ug/m3	14.49	1.18
Cycloalkanes ug/m3	0.00	0.00
Alkenes ug/m3	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00
Alkynes ug/m3	0.00	0.00
Aromatics ug/m3	17.13	6.45
Chlorinated alkanes ug/m3	0.00	0.00
Chlorinated alkenes ug/m3	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00
Total # of compounds identified	9	5
Total # of peaks	36	18
Total area of peaks	952.72	592.44
Area of identified peaks	417.92	280.54
Area % identified peaks	44	47
Toluene:Ethylbenzene	0.85	0.00
Benzene:Ethylbenzene	9.45	3.54
Xylenes:Ethylbenzene	12.16	12.89
Ethylbenzene:Ethylbenzene	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JULY 3/84

TIME PERIOD

COMPOUND NAME	1140-1210	1231-1301	1641-1711	1722-1752	1804-1834
PROPANE			0.69	0.34	
PROPADIENE					
PROPYNE					
CHLOROMETHANE					
CYCLOPROPANE					
ISOBUTANE					
VINYL CHLORIDE					
1-BUTENE	0.70				
1,3-BUTADIENE					
BUTANE			2.19	2.00	1.56
1-BUTYNE					
CHLOROETHANE					
3-METHYL-1-BUTENE					
2-METHYLBUTANE	1.04			0.88	
1-PENTENE	0.47				
PENTANE		0.64			
ISOPRENE	0.59				
TRANS-2-PENTENE					
DICHLOROMETHANE	1.47				
2-METHYL-2-BUTENE					
2-CHLORO-2-METHYLBUTANE					
3-CHLOROPROPENE					
2,2-DIMETHYLBUTANE					
3-METHYL-1-PENTENE					
2,3-DIMETHYLBUTANE	0.36				
3-METHYLPENTANE	0.58	0.26			0.16
1-HEXENE	0.40	0.16			
CIS-1,2-DICHLOROETHYLENE					
2-CHLOROBUTANE					
HEXANE	0.91	0.50			
CHLOROFORM					
TRANS-3-HEXENE					
3-CHLORO-2-METHYLPROPENE					
METYHYLCYCLOPENTANE	0.32	0.16			
1,2-DICHLOROETHANE					
1,1,1-TRICHLOROETHANE					
1-CHLOROBUTANE					
BENZENE		3.08	25.05	5.05	9.35
CARBON TETRACHLORIDE					
CYCLOHEXANE					
2-METHYLHEXANE	1.23	0.35	0.28		
2,3-DIMETHYLPENTANE		0.19	0.15		
CYCLOHEXENE					
DIBROMOMETHANE					
3-METHYLHEXANE		0.31			
1,2-DICHLOROPROPANE					
2,3-DICHLOROPROPANE					
TRICHLOROETHYLENE					
2,2,4-TRIMETHYLPENTANE		0.29	0.18	0.25	
1-HEPTENE					
HEPTANE		0.20	0.17		
1-CHLORO-3-METHYLBUTANE					

TRANS-2-HEPTENE					
METHYLCYCLOHEXANE					
2,5-DIMETHYLHEXANE	0.46				
4-METHYLCYCLOHEXENE					
1-CHLOROPENTANE					
1,1,2-TRICHLOROETHANE					
TOLUENE		1.31	1.39	1.17	1.16
1,3-DICHLOROPROPANE					
2-METHYLHEPTANE					
1,2-DIBROMOETHANE					
1-OCTENE	0.45	0.53			
TRANS1,2DIMETHYLCYLOHEXANE					
TRANS-4-OCTENE					
TETRACHLOROETHYLENE	1.44	1.30	0.87		1.35
OCTANE	0.58	0.88	0.66	0.20	0.87
2-METHYL-1-HEPTENE					
2-OCTENE					
CIS-1,2-DIMETHYLCYCLOHEXANE					
CHLOROBENZENE					
PROPYLCYCLOPENTANE					
ETHYLCYCLOHEXANE					
1-CHLOROHEXANE					
ETHYLBENZENE		6.57	4.23	4.60	6.29
M-XYLENE		27.92	18.83	20.53	27.39
STYRENE					
1,4-DICHLOROBUTANE					
O-XYLENE		27.98	18.74	20.46	29.24
1,1,2,2-TETRACHLOROETHANE					
1,2,3-TRICHLOROPROPANE					
1-NONENE		0.82			0.63
NONANE	1.40	1.80	1.16	1.12	2.89
ISOPROPYLBENZENE		4.08	2.90	2.99	4.44
2-CHLOROTOLUENE					
3-CHLOROTOLUENE					
N-PROPYLBENZENE					
4-CHLOROTOLUENE					0.47
3-ETHYLTOLUENE			0.34	0.63	0.53
4-ETHYLTOLUENE	0.74				
1,3,5-TRIMETHYLBENZENE					
2-ETHYLTOLUENE				0.60	
T-BUTYLBENZENE	1.12	0.82	0.37	0.59	0.66
1,2,4-TRIMETHYLBENZENE					
1,3-DICHLOROBENZENE					
1-DECENE					
A-CHLOROTOLUENE -					
1,5-DICHLOROPENTANE					
DECANE	1.93	2.29	1.19	1.02	2.30
SEC.BUTYLBENZENE					
3-(CHLOROMETHYL)-HEPTANE					
1,2,3-TRIMETHYLBENZENE	0.58	0.42			0.41
1-ISOPROPYL-4-METHYLBENZENE					
1,2-DICHLOROBENZENE					
INDAN					
N-BUTYLCYCLOHEXANE					
1,3-DIETHYLBENZENE					
1,4-DIETHYLBENZENE					
N-BUTYLBENZENE					
1,2-DIETHYLBENZENE					
DECALIN					
UNDECANE			2.91	2.22	4.30
1,2,3,5-TETRAMETHYLBENZENE					
DIISOPROPYLBENZENE					
1,2,3,4-TETRAMETHYLBENZENE					
TETRALIN					
DODECANE	7.40	6.92	5.68	4.45	6.80

Total hydrocarbons ug/m3:	24.17	89.78	87.98	69.10	100.80
Alkanes ug/m3	15.89	14.63	15.26	12.48	18.88
Cycloalkanes ug/m3	0.32	0.16	0.00	0.00	0.00
Alkenes ug/m3	2.61	1.51	0.00	0.00	0.63
Cycloalkenes ug/m3	0.00	0.00	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	2.44	72.18	71.85	56.62	79.47
Chlorinated alkanes ug/m3	1.47	0.00	0.00	0.00	0.00
Chlorinated alkenes ug/m3	1.44	1.30	0.87	0.00	1.35
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00	0.47
Total # of compounds identified	21	25	20	18	19
Total # of peaks	102	83	85	71	77
Total area of peaks	2743.28	1903.03	2553.96	1678.78	2170.54
Area of identified peaks	249.94	1405.35	1497.29	1080.67	1523.87
Area % identified peaks	9	74	58.63	64.37	70.21
Toluene:Ethylbenzene		0.20	0.33	0.25	0.18
Benzene:Ethylbenzene		0.47	5.92	1.10	1.49
Xylenes:Ethylbenzene		8.51	8.88	8.91	9.00
Ethylbenzene:Ethylbenzene		1.00	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JULY 5/84

COMPOUND NAME	TIME PERIOD 1108-1153	1129-1144	1201-1231
PROPANE	4.07		
PROPADIENE			
PROPYNE			
CHLOROMETHANE			
CYCLOPROPANE			
ISOBUTANE	1.53		0.92
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE	4.85	0.13	3.27
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE	4.32		3.06
1-PENTENE			
PENTANE			
ISOPRENE			
TRANS-2-PENTENE			
DICHLOROMETHANE			
2-METHYL-2-BUTENE			
2-CHLORO-2-METHYLBUTANE			
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE			
3-METHYL-1-PENTENE			
2,3-DIMETHYLBUTANE	0.33		
3-METHYLPENTANE	0.47		0.38
1-HEXENE			
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE	0.95		0.66
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE	0.31		0.23
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1-CHLOROBUTANE			
BENZENE		1.99	4.10
CARBON TETRACHLORIDE			
CYCLOHEXANE	0.07		
2-METHYLHEXANE	0.74		0.41
2,3-DIMETHYLPENTANE	0.41		0.24
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE	0.48		0.38
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			
2,2,4-TRIMETHYLPENTANE	0.91	0.25	0.34
1-HEPTENE			
HEPTANE	0.29		
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			

METHYLCYCLOHEXANE			
2,5-DIMETHYLHEXANE			
4-METHYLCYCLOHEXENE			
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	1.88	0.45	0.58
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE			
1,2-DIBROMOETHANE			
1-OCTENE			
TRANS1,2DIMETHYLCYLOHEXANE			
TRANS-4-OCTENE			
TETRACHLOROETHYLENE			
OCTANE	0.42		0.27
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE			
1-CHLOROHEXANE			
ETHYLBENZENE	1.95	2.01	5.03
M-IYLENE	7.92	9.44	23.28
STYRENE			
1,4-DICHLOROBUTANE			
O-IYLENE	7.47	9.56	25.66
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE			
1-NONENE			
NONANE	1.11	1.58	1.98
ISOPROPYLBENZENE	1.16	1.51	4.18
2-CHLOROTOLUENE			
3-CHLOROTOLUENE			
N-PROPYLBENZENE			
4-CHLOROTOLUENE			
3-ETHYLTOLUENE	0.37		0.31
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE			
2-ETHYLTOLUENE			
T-BUTYLBENZENE		0.45	0.45
1,2,4-TRIMETHYLBENZENE			
1,3-DICHLOROBENZENE			
1-DECENE			
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			
DECANE		2.18	1.59
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE			
1-ISOPROPYL-4-METHYLBENZENE			
1,2-DICHLOROBENZENE			
INDAN			
N-BUTYLCYCLOHEXANE			
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE	3.11	3.52	3.19
1,2,3,5-TETRAMETHYLBENZENE			
DIISOPROPYLBENZENE			
1,2,3,4-TETRAMETHYLBENZENE			
TETRALIN			
DODECANE	3.38		4.76

Total hydrocarbons ug/m3:	48.50	33.07	85.27
Alkanes ug/m3	27.37	7.66	21.45
Cycloalkanes ug/m3	0.38	0.00	0.23
Alkenes ug/m3	0.00	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00
Aromatics ug/m3	20.75	25.41	63.59
Chlorinated alkanes ug/m3	0.00	0.00	0.00
Chlorinated alkenes ug/m3	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00
Total # of compounds identified	24	12	23
Total # of peaks	62	30	50
Total area of peaks	1805.25	717.78	1511.80
Area of identified peaks	1002.98	588.26	1324.83
Area % identified peaks	56	82	88
Toluene:Ethylbenzene	0.96	0.22	0.12
Benzene:Ethylbenzene	0.00	0.99	0.82
Xylenes:Ethylbenzene	7.89	9.45	9.73
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JULY 7/84

TIME PERIOD

COMPOUND NAME	0950-1030 1105-1137	1145-1215	
PROPANE			
PROPADIENE			
PROPYNE			
CHLOROMETHANE			
CYCLOPROPANE			
ISOBUTANE			
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE			
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE		0.37	
1-PENTENE			
PENTANE		0.26	
ISOPRENE			
TRANS-2-PENTENE			
DICHLOROMETHANE			
2-METHYL-2-BUTENE			
2-CHLORO-2-METHYLBUTANE			
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE			
3-METHYL-1-PENTENE			
2,3-DIMETHYLBUTANE			
3-METHYLPENTANE		0.16	
1-HEXENE			
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE		0.28	
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE			
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1-CHLOROBUTANE			
BENZENE	19.07	5.26	9.39
CARBON TETRACHLORIDE			
CYCLOHEXANE			
2-METHYLHEXANE			
2,3-DIMETHYLPENTANE	0.84	0.30	
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE			
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			
2,2,4-TRIMETHYLPENTANE	8.31	2.00	1.04
1-HEPTENE			
HEPTANE			
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			

METHYLCYCLOHEXANE			
2,5-DIMETHYLHEXANE	2.81	1.11	
4-METHYLCYCLOHEXENE			
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	1.22	0.55	
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE			
1,2-DIBROMOETHANE			
1-OCTENE			
TRANS1,2DIMETHYLCYLOHEXANE			
TRANS-4-OCTENE			
TETRACHLOROETHYLENE			
OCTANE			
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE			
1-CHLOROHEXANE			
ETHYLBENZENE	1.76	2.38	3.08
M-XYLENE	7.56	10.90	14.69
STYRENE			
1,4-DICHLOROBUTANE			
O-XYLENE	7.43	12.11	17.10
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE			
1-NONENE			
NONANE	1.07	0.93	1.13
ISOPROPYLBENZENE	1.05	1.99	2.89
2-CHLOROTOLUENE			
3-CHLOROTOLUENE			
N-PROPYLBENZENE			
4-CHLOROTOLUENE			
3-ETHYLTOLUENE			
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE			
2-ETHYLTOLUENE			
T-BUTYLBENZENE	0.58	0.66	0.70
1,2,4-TRIMETHYLBENZENE	1.02	1.15	0.65
1,3-DICHLOROBENZENE			
1-DECENE			
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			
DECANE	0.70	1.22	0.86
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE			
1-ISOPROPYL-4-METHYLBENZENE			
1,2-DICHLOROBENZENE			
INDAN			
N-BUTYLCYCLOHEXANE			
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE	2.15		
1,2,3,5-TETRAMETHYLBENZENE			
DIISOPROPYLBENZENE			
1,2,3,4-TETRAMETHYLBENZENE			
TETRALIN			
DODECANE	2.50		

Total hydrocarbons ug/m3:	58.07	41.63	51.53
Alkanes ug/m3	18.38	6.63	3.03
Cycloalkanes ug/m3	0.00	0.00	0.00
Alkenes ug/m3	0.00	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00
Aromatics ug/m3	39.69	35.00	48.50
Chlorinated alkanes ug/m3	0.00	0.00	0.00
Chlorinated alkenes ug/m3	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00
Total # of compounds identified	15	17	10
Total # of peaks	33	40	25
Total area of peaks	1405.40	1077.77	1048.12
Area of identified peaks	1018.00	771.00	891.39
Area % identified peaks	72	72	85
Toluene:Ethylbenzene	0.69	0.23	0.00
Benzene:Ethylbenzene	10.84	2.21	3.05
Xylenes:Ethylbenzene	8.52	9.67	10.32
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JULY 8/84

COMPOUND NAME	TIME PERIOD 0918-0948	0950-1020	1505-1528	1541-1611	1802-1817	
PROPANE						
PROPADIENE						
PROPYNE						
CHLOROMETHANE						
CYCLOPROPANE						
ISOBUTANE						
VINYL CHLORIDE						
1-BUTENE						
1,3-BUTADIENE						0.26
BUTANE		4.53		1.74		0.66
1-BUTYNE						
CHLOROETHANE						
3-METHYL-1-BUTENE						
2-METHYLBUTANE		12.55		5.01		5.43
1-PENTENE						
PENTANE				2.13		
ISOPRENE						
TRANS-2-PENTENE						
DICHLOROMETHANE						
2-METHYL-2-BUTENE						
2-CHLORO-2-METHYLBUTANE						
3-CHLOROPROPENE						
2,2-DIMETHYLBUTANE				0.08		
3-METHYL-1-PENTENE						
2,3-DIMETHYLBUTANE	0.24	3.00		0.43		2.13
3-METHYLPENTANE	0.52	0.97		0.41		0.62
1-HEXENE						
CIS-1,2-DICHLOROETHYLENE						
2-CHLOROBUTANE						
HEXANE	3.13	1.62		0.81		0.75
CHLOROFORM						
TRANS-3-HEXENE						
3-CHLORO-2-METHYLPROPENE						
METYHYLCYCLOPENTANE	0.53	0.49		0.25		0.27
1,2-DICHLOROETHANE						
1,1,1-TRICHLOROETHANE						
1-CHLOROBUTANE						
BENZENE	10.87	8.16	13.30			4.13
CARBON TETRACHLORIDE						
CYCLOHEXANE						
2-METHYLHEXANE	3.38	6.06		0.65		3.95
2,3-DIMETHYLPENTANE	1.85	3.32		0.35		2.17
CYCLOHEXENE						
DIBROMOMETHANE						
3-METHYLHEXANE	2.04	0.91		0.36		0.54
1,2-DICHLOROPROPANE						
2,3-DICHLOROPROPANE	0.93					
TRICHLOROETHYLENE				0.08		
2,2,4-TRIMETHYLPENTANE	11.05	24.31	1.07			16.05
1-HEPTENE						
HEPTANE	1.02	0.40		0.18		0.22
1-CHLORO-3-METHYLBUTANE						
TRANS-2-HEPTENE	0.05					

METHYLCYCLOHEXANE	0.83	0.34		0.15	0.17
2,5-DIMETHYLHEXANE	3.45	5.86	0.66	0.49	3.57
4-METHYLCYCLOHEXENE	0.21				
1-CHLOROPENTANE					
1,1,2-TRICHLOROETHANE					
TOLUENE	3.59	2.13	0.57	0.86	1.67
1,3-DICHLOROPROPANE					
2-METHYLHEPTANE		0.19			
1,2-DIBROMOETHANE					
1-OCTENE	0.24	0.25			
TRANS1,2DIMETHYLCYLOHEXANE	0.09				
TRANS-4-OCTENE					
TETRACHLOROETHYLENE					
OCTANE	0.75	0.35		0.23	0.52
2-METHYL-1-HEPTENE					
2-OCTENE					
CIS-1,2-DIMETHYLCYCLOHEXANE					
CHLOROBENZENE					
PROPYLCYCLOPENTANE					
ETHYLCYCLOHEXANE	0.38	0.33			0.19
1-CHLOROHEXANE					
ETHYLBENZENE	2.98	2.62	1.46	2.81	1.94
M-XYLENE	8.72	8.74	6.54	11.22	7.61
STYRENE					
1,4-DICHLOROBUTANE					
O-XYLENE	8.28	8.58	7.06	12.18	8.80
1,1,2,2-TETRACHLOROETHANE					
1,2,3-TRICHLOROPROPANE					
1-NONENE		0.60	0.21	0.21	0.52
NONANE	1.71	2.03	1.16	1.10	1.36
ISOPROPYLBENZENE	1.62	1.87	1.26	2.22	1.84
2-CHLOROTOLUENE					
3-CHLOROTOLUENE					
N-PROPYLBENZENE					
4-CHLOROTOLUENE	1.32				0.59
3-ETHYLTOLUENE	0.54			0.09	0.33
4-ETHYLTOLUENE		0.39			
1,3,5-TRIMETHYLBENZENE	0.62				
2-ETHYLTOLUENE					
T-BUTYLBENZENE	1.26	1.55	0.85	0.64	0.58
1,2,4-TRIMETHYLBENZENE		2.70	0.62	1.11	1.01
1,3-DICHLOROBENZENE					
1-DECENE					
A-CHLOROTOLUENE					
1,5-DICHLOROPENTANE	0.19	0.28			
DECANE	3.92	5.66	2.07	1.03	1.65
SEC.BUTYLBENZENE					
3-(CHLOROMETHYL)-HEPTANE					
1,2,3-TRIMETHYLBENZENE	0.49	0.64			0.37
1-ISOPROPYL-4-METHYLBENZENE	1.04				
1,2-DICHLOROBENZENE					
INDAN					
N-BUTYLCYCLOHEXANE	0.34	1.34			
1,3-DIETHYLBENZENE					
1,4-DIETHYLBENZENE					
N-BUTYLBENZENE					
1,2-DIETHYLBENZENE					
DECALIN					
UNDECANE	5.55				4.51
1,2,3,5-TETRAMETHYLBENZENE					
DIISOPROPYLBENZENE					
1,2,3,4-TETRAMETHYLBENZENE	0.83				0.86
TETRALIN					
DODECANE	3.58				5.30

Total hydrocarbons ug/m3:	88.14	112.77	36.83	46.82	80.57
Alkanes ug/m3	42.19	71.76	4.96	15.00	49.43
Cycloalkanes ug/m3	2.17	2.50	0.00	0.40	0.63
Alkenes ug/m3	0.29	0.85	0.21	0.21	0.78
Cycloalkenes ug/m3	0.21	0.00	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	40.84	37.38	31.66	31.13	29.14
Chlorinated alkanes ug/m3	0.19	0.28	0.00	0.00	0.00
Chlorinated alkenes ug/m3	0.93	0.00	0.00	0.08	0.00
Chlorinated aromatics ug/m3	1.32	0.00	0.00	0.00	0.59
Total # of compounds identified	37	32	13	27	33
Total # of peaks	122	110	60	62	96
Total area of peaks	2315.57	3528.30	735.00	1339.74	2510.25
Area of identified peaks	1492.64	2042.02	560.17	750.31	1569.47
Area % identified peaks	64	58	76	56	63
Toluene:Ethylbenzene	1.20	0.81	0.39	0.31	0.86
Benzene:Ethylbenzene	3.65	3.11	9.11	0.00	2.13
Xylenes:Ethylbenzene	5.70	6.61	9.32	8.33	8.46
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JULY 13/84

COMPOUND NAME	TIME PERIOD 0937-0953	1020-1035	1132-1202
PROPANE	2.05		
PROPADIENE			
PROPYNE			
CHLOROMETHANE			
CYCLOPROPANE			
ISOBUTANE	0.99		
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE	3.82		9.26
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE	5.72		32.43
1-PENTENE	0.14		0.30
PENTANE	2.26	0.09	4.34
ISOPRENE			0.99
TRANS-2-PENTENE			
DICHLOROMETHANE	0.86		0.74
2-METHYL-2-BUTENE	0.28		1.23
2-CHLORO-2-METHYLBUTANE			
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE			0.19
3-METHYL-1-PENTENE			0.11
2,3-DIMETHYLBUTANE	1.17	0.14	
3-METHYLPENTANE	0.54	0.21	2.04
1-HEXENE	0.15		0.26
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE	0.72	0.97	1.23
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE	0.30	0.19	0.37
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1-CHLOROBUTANE			
BENZENE	5.69	7.32	14.40
CARBON TETRACHLORIDE			
CYCLOHEXANE	0.06	0.31	0.10
2-METHYLHEXANE	2.84	1.65	23.03
2,3-DIMETHYLPENTANE	1.55	0.90	12.63
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE	0.64	0.79	1.53
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			
2,2,4-TRIMETHYLPENTANE	10.64	6.04	111.03
1-HEPTENE			0.50
HEPTANE	0.26	0.30	0.40
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			

METHYLCYCLOHEXANE	0.17	0.23	0.20
2,5-DIMETHYLHEXANE	3.44	2.29	28.00
4-METHYLCYCLOHEXENE			
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	1.76	1.42	2.99
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE	0.13	0.11	0.46
1,2-DIBROMOETHANE			
1-OCTENE			0.42
TRANS1,2DIMETHYLCYLOHEXANE			
TRANS-4-OCTENE			
TETRACHLOROETHYLENE			1.24
OCTANE		0.34	0.53
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE	0.08	0.07	0.69
1-CHLOROHEXANE			
ETHYLBENZENE	0.72	1.20	3.93
M-XYLENE	3.04	3.97	15.64
STYRENE			
1,4-DICHLOROBUTANE			
O-XYLENE	2.86	4.19	19.46
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE			
1-NONENE	0.27	0.21	1.29
NONANE	0.59	0.76	3.21
ISOPROPYLBENZENE	0.49	0.95	4.47
2-CHLOROTOLUENE			
3-CHLOROTOLUENE			
N-PROPYLBENZENE			0.18
4-CHLOROTOLUENE	0.39	0.36	1.67
3-ETHYLTOLUENE		0.07	
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE	0.12	0.14	0.79
2-ETHYLTOLUENE			
T-BUTYLBENZENE		0.62	
1,2,4-TRIMETHYLBENZENE	0.30	1.08	
1,3-DICHLOROBENZENE			
1-DECENE			
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			0.18
DECANE	0.56	0.93	
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE			0.44
1-ISOPROPYL-4-METHYLBENZENE			0.57
1,2-DICHLOROBENZENE			
INDAN			
N-BUTYLCYCLOHEXANE			
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			0.55
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE			
1,2,3,5-TETRAMETHYLBENZENE			
DIISOPROPYLBENZENE			
1,2,3,4-TETRAMETHYLBENZENE			
TETRALIN			
DODECANE			

Total hydrocarbons ug/m3:	55.60	37.85	304.02
Alkanes ug/m3	37.92	15.52	230.31
Cycloalkanes ug/m3	0.61	0.80	1.36
Alkenes ug/m3	0.84	0.21	5.10
Cycloalkenes ug/m3	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00
Aromatics ug/m3	14.98	20.96	63.42
Chlorinated alkanes ug/m3	0.86	0.00	0.92
Chlorinated alkenes ug/m3	0.00	0.00	1.24
Chlorinated aromatics ug/m3	0.39	0.36	1.67
Total # of compounds identified	35	30	42
Total # of peaks	93	70	141
Total area of peaks	2356.19	1335.80	10329.38
Area of identified peaks	1330.59	888.76	7856.68
Area % identified peaks	56	67	76
Toluene:Ethylbenzene	2.44	1.18	0.76
Benzene:Ethylbenzene	7.90	6.10	3.66
Xylenes:Ethylbenzene	8.19	6.80	8.93
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JULY 14/84

TIME PERIOD

COMPOUND NAME	0912-0941	0943-1013	1018-1048
PROPANE		3.98	
PROPADIENE			
PROPYNE			
CHLOROMETHANE			
CYCLOPROPANE			
ISOBUTANE		2.03	
VINYL CHLORIDE			
1-BUTENE		0.10	
1,3-BUTADIENE			
BUTANE	0.54	7.06	
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE	2.06	10.94	
1-PENTENE			
PENTANE		1.73	
ISOPRENE			
TRANS-2-PENTENE			
DICHLOROMETHANE			
2-METHYL-2-BUTENE	0.15		
2-CHLORO-2-METHYLBUTANE			
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE			
3-METHYL-1-PENTENE			
2,3-DIMETHYLBUTANE	1.69	1.83	
3-METHYLPENTANE	0.54	0.47	
1-HEXENE			
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE	0.91	0.50	
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE	0.20	0.12	
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1-CHLOROBUTANE			
BENZENE	6.50	12.38	4.61
CARBON TETRACHLORIDE			
CYCLOHEXANE	0.15	0.04	
2-METHYLHEXANE	8.08	2.91	0.90
2,3-DIMETHYLPENTANE	4.43	1.60	0.49
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE	0.94	0.34	0.38
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			0.02
2,2,4-TRIMETHYLPENTANE	32.07	13.17	1.94
1-HEPTENE			0.04
HEPTANE	0.29	0.08	0.19
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			

METHYLCYCLOHEXANE	0.21		0.11
2,5-DIMETHYLHEXANE	7.03	1.54	0.66
4-METHYLCYCLOHEXENE			
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	2.16		1.36
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE			
1,2-DIBROMOETHANE			
1-OCTENE			
TRANS1,2DIMETHYLCYLOHEXANE			
TRANS-4-OCTENE			
TETRACHLOROETHYLENE			
OCTANE			
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE			
1-CHLOROHEXANE			
ETHYLBENZENE			
M-XYLENE			
STYRENE		0.22	0.29
1,4-DICHLOROBUTANE			0.08
O-XYLENE		3.32	9.60
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE			
1-NONENE			
NONANE		0.74	
ISOPROPYLBENZENE			
2-CHLOROTOLUENE	0.31		
3-CHLOROTOLUENE			
N-PROPYLBENZENE			
4-CHLOROTOLUENE			
3-ETHYLTOLUENE	0.37	0.11	0.61
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE	0.43	0.23	0.45
2-ETHYLTOLUENE			0.27
T-BUTYLBENZENE			1.00
1,2,4-TRIMETHYLBENZENE	0.86	0.70	1.74
1,3-DICHLOROBENZENE			
1-DECENE			0.05
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			
DECANE	1.70	1.77	1.79
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE		0.17	
1-ISOPROPYL-4-METHYLBENZENE			4.64
1,2-DICHLOROBENZENE			
INDAN			
N-BUTYLCYCLOHEXANE			
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE	4.74	4.17	4.53
1,2,3,5-TETRAMETHYLBENZENE			0.28
DIISOPROPYLBENZENE			0.58
1,2,3,4-TETRAMETHYLBENZENE	0.65		0.29
TETRALIN			
DODECANE	7.19	6.83	8.54

Total hydrocarbons ug/m3:	84.20	79.08	45.44
Alkanes ug/m3	72.21	61.69	19.42
Cycloalkanes ug/m3	0.56	0.16	0.11
Alkenes ug/m3	0.15	0.10	0.09
Cycloalkenes ug/m3	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00
Aromatics ug/m3	10.97	17.13	25.72
Chlorinated alkanes ug/m3	0.00	0.00	0.08
Chlorinated alkenes ug/m3	0.00	0.00	0.02
Chlorinated aromatics ug/m3	0.31	0.00	0.00
Total # of compounds identified	25	28	27
Total # of peaks	117	122	112
Total area of peaks	2813.81	2475.41	1156.92
Area of identified peaks	1432.41	1335.87	569.81
Area % identified peaks	51	54	49

Toluene:Ethylbenzene

Benzene:Ethylbenzene

Xylenes:Ethylbenzene

Ethylbenzene:Ethylbenzene

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JULY 16/84

COMPOUND NAME	TIME PERIOD 1010-1028	1029-1059	1121-1151	1229-1244
PROPANE	2.51		1.98	
PROPADIENE				
PROPYNE				
CHLOROMETHANE				
CYCLOPROPANE				
ISOBUTANE			0.84	
VINYL CHLORIDE				
1-BUTENE	0.68			
1,3-BUTADIENE				
BUTANE	3.81		1.54	
1-BUTYNE				
CHLOROETHANE				
3-METHYL-1-BUTENE				
2-METHYLBUTANE	4.64		1.95	
1-PENTENE			0.10	
PENTANE				
ISOPRENE			0.31	
TRANS-2-PENTENE				
DICHLOROMETHANE				
2-METHYL-2-BUTENE				
2-CHLORO-2-METHYLBUTANE				
3-CHLOROPROPENE				
2,2-DIMETHYLBUTANE				
3-METHYL-1-PENTENE				
2,3-DIMETHYLBUTANE			0.28	0.66
3-METHYLPENTANE				
1-HEXENE				
CIS-1,2-DICHLOROETHYLENE				
2-CHLOROBUTANE				
HEXANE				
CHLOROFORM				
TRANS-3-HEXENE				
3-CHLORO-2-METHYLPROPENE				
METYHYLCYCLOPENTANE			0.15	
1,2-DICHLOROETHANE				
1,1,1-TRICHLOROETHANE				
1-CHLOROBUTANE				
BENZENE	15.99	8.25	7.14	3.64
CARBON TETRACHLORIDE				
CYCLOHEXANE				
2-METHYLHEXANE				
2,3-DIMETHYLPENTANE	1.00	1.75	0.16	2.52
CYCLOHEXENE				
DIBROMOMETHANE				
3-METHYLHEXANE	0.33	0.34	0.16	0.37
1,2-DICHLOROPROPANE				
2,3-DICHLOROPROPANE				
TRICHLOROETHYLENE				
2,2,4-TRIMETHYLPENTANE	4.19	13.98	1.27	21.65
1-HEPTENE				
HEPTANE	0.22	0.13	0.10	0.11
1-CHLORO-3-METHYLBUTANE				
TRANS-2-HEPTENE				

METHYLCYCLOHEXANE		0.08		
2,5-DIMETHYLHEXANE		3.27	0.58	4.88
4-METHYLCYCLOHEXENE				
1-CHLOROPENTANE				
1,1,2-TRICHLOROETHANE				
TOLUENE		0.88	0.99	1.34
1,3-DICHLOROPROPANE				
2-METHYLHEPTANE				0.08
1,2-DIBROMOETHANE				
1-OCTENE				
TRANS1,2DIMETHYLCYLOHEXANE				
TRANS-4-OCTENE				
TETRACHLOROETHYLENE				
OCTANE	0.21	0.07		0.11
2-METHYL-1-HEPTENE				
2-OCTENE				
CIS-1,2-DIMETHYLCYCLOHEXANE				
CHLOROBENZENE				
PROPYLCYCLOPENTANE				
ETHYLCYCLOHEXANE				0.15
1-CHLOROHEXANE				
ETHYLBENZENE	0.88	1.17	1.36	1.29
M-XYLENE	3.60	5.32	5.62	5.20
STYRENE				
1,4-DICHLOROBUTANE				
O-XYLENE	3.56	6.36	7.37	
1,1,2,2-TETRACHLOROETHANE				
1,2,3-TRICHLOROPROPANE				1.29
1-NONENE		0.27	0.26	
NONANE	1.10	1.03	1.14	1.11
ISOPROPYLBENZENE	0.69	1.45	1.67	1.67
2-CHLOROTOLUENE				
3-CHLOROTOLUENE				
N-PROPYLBENZENE				
4-CHLOROTOLUENE		0.37		
3-ETHYLTOLUENE	0.10	0.07	0.31	
4-ETHYLTOLUENE				
1,3,5-TRIMETHYLBENZENE				0.25
2-ETHYLTOLUENE			0.27	
T-BUTYLBENZENE	0.34	0.62	0.78	0.45
1,2,4-TRIMETHYLBENZENE	0.59	0.54	0.63	
1,3-DICHLOROBENZENE				
1-DECENE				
A-CHLOROTOLUENE				
1,5-DICHLOROPENTANE				
DECANE	2.93	1.13	1.44	1.67
SEC.BUTYLBENZENE				
3-(CHLOROMETHYL)-HEPTANE				
1,2,3-TRIMETHYLBENZENE				0.31
1-ISOPROPYL-4-METHYLBENZENE				
1,2-DICHLOROBENZENE				
INDAN				
N-BUTYLCYCLOHEXANE				
1,3-DIETHYLBENZENE				
1,4-DIETHYLBENZENE				
N-BUTYLBENZENE				
1,2-DIETHYLBENZENE				
DECALIN				
UNDECANE		3.63	3.26	3.21
1,2,3,5-TETRAMETHYLBENZENE				
DIISOPROPYLBENZENE				
1,2,3,4-TETRAMETHYLBENZENE				
TETRALIN				
DODECANE				

Total hydrocarbons ug/m3:	47.37	50.71	41.66	51.96
Alkanes ug/m3	20.94	25.33	14.70	36.37
Cycloalkanes ug/m3	0.00	0.08	0.15	0.15
Alkenes ug/m3	0.68	0.27	0.67	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00	0.00
Aromatics ug/m3	25.75	24.66	26.14	14.15
Chlorinated alkanes ug/m3	0.00	0.00	0.00	1.29
Chlorinated alkenes ug/m3	0.00	0.00	0.00	0.00
Chlorinated aromatics ug/m3	0.00	0.37	0.00	0.00
Total # of compounds identified	19	21	27	21
Total # of peaks	62	77	77	80
Total area of peaks	1442.78	1492.29	1299.98	1900.02
Area of identified peaks	546.72	986.40	709.63	1054.89
Area % identified peaks	38	66	55	56
Toluene:Ethylbenzene	0.00	0.75	0.73	1.04
Benzene:Ethylbenzene	18.17	7.05	5.25	2.82
Xylenes:Ethylbenzene	8.14	9.98	9.55	4.03
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JULY 17/84

COMPOUND NAME	TIME PERIOD 0902-0920 0929-0944	1035-1104	
PROPANE	1.94	0.94	
PROPADIENE			
PROPYNE			
CHLOROMETHANE			
CYCLOPROPANE			
ISOBUTANE			
VINYL CHLORIDE			
1-BUTENE			
1,3-BUTADIENE			
BUTANE	1.56	5.56	
1-BUTYNE			
CHLOROETHANE			
3-METHYL-1-BUTENE			
2-METHYLBUTANE	3.61	4.70	
1-PENTENE			
PENTANE	0.93	0.69	
ISOPRENE			
TRANS-2-PENTENE			
DICHLOROMETHANE			
2-METHYL-2-BUTENE	0.35		
2-CHLORO-2-METHYLBUTANE			
3-CHLOROPROPENE			
2,2-DIMETHYLBUTANE		0.16	
3-METHYL-1-PENTENE			
2,3-DIMETHYLBUTANE	1.49	0.68	
3-METHYLPENTANE	0.38	0.96	0.11
1-HEXENE			
CIS-1,2-DICHLOROETHYLENE			
2-CHLOROBUTANE			
HEXANE	0.37	1.91	0.43
CHLOROFORM			
TRANS-3-HEXENE			
3-CHLORO-2-METHYLPROPENE			
METYHYLCYCLOPENTANE	0.11	0.68	
1,2-DICHLOROETHANE			
1,1,1-TRICHLOROETHANE			
1-CHLOROBUTANE			
BENZENE	8.78	4.69	14.56
CARBON TETRACHLORIDE			
CYCLOHEXANE	0.02		
2-METHYLHEXANE	4.35	1.72	0.87
2,3-DIMETHYLPENTANE	2.38	0.94	0.48
CYCLOHEXENE			
DIBROMOMETHANE			
3-METHYLHEXANE	0.43	1.22	0.27
1,2-DICHLOROPROPANE			
2,3-DICHLOROPROPANE			
TRICHLOROETHYLENE			
2,2,4-TRIMETHYLPENTANE	19.70	3.19	1.38
1-HEPTENE			
HEPTANE	0.08	0.58	
1-CHLORO-3-METHYLBUTANE			
TRANS-2-HEPTENE			

METHYLCYCLOHEXANE	0.09	0.40	
2,5-DIMETHYLHEXANE	2.85	1.27	
4-METHYLCYCLOHEXENE			
1-CHLOROPENTANE			
1,1,2-TRICHLOROETHANE			
TOLUENE	1.55	3.54	
1,3-DICHLOROPROPANE			
2-METHYLHEPTANE			
1,2-DIBROMOETHANE			
1-OCTENE			
TRANS1,2DIMETHYLCYLOHEXANE		0.07	
TRANS-4-OCTENE			
TETRACHLOROETHYLENE		1.01	
OCTANE		0.46	
2-METHYL-1-HEPTENE			
2-OCTENE			
CIS-1,2-DIMETHYLCYCLOHEXANE			
CHLOROBENZENE			
PROPYLCYCLOPENTANE			
ETHYLCYCLOHEXANE		0.21	
1-CHLOROHEXANE			
ETHYLBENZENE	0.22	1.24	0.33
M-XYLENE	0.52	3.51	1.18
STYRENE			
1,4-DICHLOROBUTANE			
O-XYLENE	0.28	1.95	0.96
1,1,2,2-TETRACHLOROETHANE			
1,2,3-TRICHLOROPROPANE			
1-NONENE			
NONANE	0.27	0.63	0.24
ISOPROPYLBENZENE		0.35	0.57
2-CHLOROTOLUENE			
3-CHLOROTOLUENE			
N-PROPYLBENZENE			
4-CHLOROTOLUENE	0.17	0.37	
3-ETHYLTOLUENE	0.10	0.41	
4-ETHYLTOLUENE			
1,3,5-TRIMETHYLBENZENE			
2-ETHYLTOLUENE			
T-BUTYLBENZENE		0.85	
1,2,4-TRIMETHYLBENZENE	0.28	0.95	
1,3-DICHLOROBENZENE			
1-DECENE			
A-CHLOROTOLUENE			
1,5-DICHLOROPENTANE			
DECANE		1.53	
SEC.BUTYLBENZENE			
3-(CHLOROMETHYL)-HEPTANE			
1,2,3-TRIMETHYLBENZENE			
1-ISOPROPYL-4-METHYLBENZENE			
1,2-DICHLOROBENZENE			
INDAN			
N-BUTYLCYCLOHEXANE			
1,3-DIETHYLBENZENE			
1,4-DIETHYLBENZENE			
N-BUTYLBENZENE			
1,2-DIETHYLBENZENE			
DECALIN			
UNDECANE			
1,2,3,5-TETRAMETHYLBENZENE			
DIISOPROPYLBENZENE			
1,2,3,4-TETRAMETHYLBENZENE			
TETRALIN			
DODECANE			

Total hydrocarbons ug/m3:	52.81	46.43	22.32
Alkanes ug/m3	40.34	26.20	4.72
Cycloalkanes ug/m3	0.22	1.36	0.00
Alkenes ug/m3	0.35	0.00	0.00
Cycloalkenes ug/m3	0.00	0.00	0.00
Alkynes ug/m3	0.00	0.00	0.00
Aromatics ug/m3	11.73	17.49	17.60
Chlorinated alkanes ug/m3	0.00	0.00	0.00
Chlorinated alkenes ug/m3	0.00	1.01	0.00
Chlorinated aromatics ug/m3	0.17	0.37	0.00
Total # of compounds identified	26	31	13
Total # of peaks	55	84	33
Total area of peaks	2610.25	1522.79	723.56
Area of identified peaks	1527.41	1007.34	403.68
Area % identified peaks	59	66	56
Toluene:Ethylbenzene	7.05	2.85	0.00
Benzene:Ethylbenzene	39.91	3.78	44.12
Xylenes:Ethylbenzene	3.64	4.40	6.48
Ethylbenzene:Ethylbenzene	1.00	1.00	1.00

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

PLANE SAMPLE
DATE: JULY 18/84

	TIME PERIOD
COMPOUND NAME	1144-1156
PROPANE	0.42
PROPADIENE	
PROPYNE	
CHLOROMETHANE	
CYCLOPROPANE	
ISOBUTANE	
VINYL CHLORIDE	
1-BUTENE	
1,3-BUTADIENE	
BUTANE	0.30
1-BUTYNE	
CHLOROETHANE	
3-METHYL-1-BUTENE	
2-METHYLBUTANE	
1-PENTENE	
PENTANE	
ISOPRENE	
TRANS-2-PENTENE	
DICHLOROMETHANE	
2-METHYL-2-BUTENE	
2-CHLORO-2-METHYLBUTANE	
3-CHLOROPROPENE	
2,2-DIMETHYLBUTANE	
3-METHYL-1-PENTENE	
2,3-DIMETHYLBUTANE	0.15
3-METHYLPENTANE	0.09
1-HEXENE	
CIS-1,2-DICHLOROETHYLENE	
2-CHLOROBUTANE	
HEXANE	0.33
CHLOROFORM	
TRANS-3-HEXENE	
3-CHLORO-2-METHYLPROPENE	
METYHYLCYCLOPENTANE	
1,2-DICHLOROETHANE	
1,1,1-TRICHLOROETHANE	
1-CHLOROBUTANE	
BENZENE	9.24
CARBON TETRACHLORIDE	
CYCLOHEXANE	0.10
2-METHYLHEXANE	0.74
2,3-DIMETHYLPENTANE	0.40
CYCLOHEXENE	
DIBROMOMETHANE	
3-METHYLHEXANE	0.20
1,2-DICHLOROPROPANE	
2,3-DICHLOROPROPANE	
TRICHLOROETHYLENE	
2,2,4-TRIMETHYLPENTANE	2.59
1-HEPTENE	
HEPTANE	0.11
1-CHLORO-3-METHYLBUTANE	
TRANS-2-HEPTENE	

METHYLCYCLOHEXANE	
2,5-DIMETHYLHEXANE	
4-METHYLCYCLOHEXENE	
1-CHLOROPENTANE	
1,1,2-TRICHLOROETHANE	
TOLUENE	0.61
1,3-DICHLOROPROPANE	
2-METHYLHEPTANE	
1,2-DIBROMOETHANE	
1-OCTENE	
TRANS1,2DIMETHYLCYLOHEXANE	
TRANS-4-OCTENE	
TETRACHLOROETHYLENE	
OCTANE	
2-METHYL-1-HEPTENE	
2-OCTENE	
CIS-1,2-DIMETHYLCYCLOHEXANE	
CHLOROBENZENE	
PROPYLCYCLOPENTANE	
ETHYLCYCLOHEXANE	
1-CHLOROHEXANE	
ETHYLBENZENE	0.38
M-XYLENE	1.07
STYRENE	
1,4-DICHLOROBUTANE	
O-XYLENE	1.09
1,1,2,2-TETRACHLOROETHANE	
1,2,3-TRICHLOROPROPANE	
1-NONENE	
NONANE	0.29
ISOPROPYLBENZENE	0.25
2-CHLOROTOLUENE	
3-CHLOROTOLUENE	
N-PROPYLBENZENE	
4-CHLOROTOLUENE	
3-ETHYLTOLUENE	
4-ETHYLTOLUENE	
1,3,5-TRIMETHYLBENZENE	
2-ETHYLTOLUENE	
T-BUTYLBENZENE	0.50
1,2,4-TRIMETHYLBENZENE	0.19
1,3-DICHLOROBENZENE	
1-DECENE	
A-CHLOROTOLUENE	
1,5-DICHLOROPENTANE	
DECANE	0.99
SEC.BUTYLBENZENE	
3-(CHLOROMETHYL)-HEPTANE	
1,2,3-TRIMETHYLBENZENE	
1-ISOPROPYL-4-METHYLBENZENE	
1,2-DICHLOROBENZENE	
INDAN	
N-BUTYLCYCLOHEXANE	
1,3-DIETHYLBENZENE	
1,4-DIETHYLBENZENE	
N-BUTYLBENZENE	
1,2-DIETHYLBENZENE	
DECALIN	
UNDECANE	
1,2,3,5-TETRAMETHYLBENZENE	
DIISOPROPYLBENZENE	
1,2,3,4-TETRAMETHYLBENZENE	
TETRALIN	
DODECANE	

Total hydrocarbons ug/m3:	20.04
Alkanes ug/m3	6.61
Cycloalkanes ug/m3	0.10
Alkenes ug/m3	0.00
Cycloalkenes ug/m3	0.00
Alkynes ug/m3	0.00
Aromatics ug/m3	13.33
Chlorinated alkanes ug/m3	0.00
Chlorinated alkenes ug/m3	0.00
Chlorinated aromatics ug/m3	0.00
Total # of compounds identified	21
Total # of peaks	63
Total area of peaks	991.17
Area of identified peaks	375.99
Area % identified peaks	38
Toluene:Ethylbenzene	1.61
Benzene:Ethylbenzene	24.32
Xylenes:Ethylbenzene	5.68
Ethylbenzene:Ethylbenzene	1.00

SARNIA OXIDANT STUDY - June and July, 1984

GAS CHROMATOGRAPHIC DATA.....Grab Samples

SURVEY NAME

SARNIA OXIDANTS STUDY JUNE-JULY 1984

units ug/m3

GRAB SAMPLES

COMPOUND NAME	SAMPLE NUMBER 1	2	3	4	5	6
PROPANE	5.50			4.58	2.63	6.58
PROPADIENE						
PROPYNE						
CHLOROMETHANE						
CYCLOPROPANE						
ISOBUTANE	3.06			1.54		4.45
VINYL CHLORIDE						
1-BUTENE						
1,3-BUTADIENE	3.80		0.79			
BUTANE	4.04	5.78	5.62	4.49	165.18	18.62
1-BUTYNE						
CHLOROETHANE				0.88		
3-METHYL-1-BUTENE						
2-METHYLBUTANE	4.70		4.08	5.44	262.74	41.68
1-PENTENE						1.40
PENTANE	3.60	0.49	2.01	2.63	162.22	10.84
ISOPRENE	9.17	2.12			3.38	2.28
TRANS-2-PENTENE	0.57				17.28	
DICHLOROMETHANE						
2-METHYL-2-BUTENE	3.13				12.39	1.01
2-CHLORO-2-METHYLBUTANE						
3-CHLOROPROPENE						
2,2-DIMETHYLBUTANE	0.39				13.48	
3-METHYL-1-PENTENE					4.39	
2,3-DIMETHYLBUTANE	0.93	0.57			34.09	8.14
3-METHYLPENTANE	2.11	3.96	0.95	0.74	69.33	2.27
1-HEXENE	0.71				9.84	1.25
CIS-1,2-DICHLOROETHYLENE						
2-CHLOROBUTANE						
HEXANE	5.28	11.78	0.97	1.02	136.91	3.41
CHLOROFORM						
TRANS-3-HEXENE					3.32	
3-CHLORO-2-METHYLPROPENE						
METYHYLCYCLOPENTANE	2.20	1.94	0.82	0.47	33.87	1.36
1,2-DICHLOROETHANE						
1,1,1-TRICHLOROETHANE						
1-CHLOROBUTANE						
BENZENE	32.66	9.16	1.50		39.51	30.84
CARBON TETRACHLORIDE						
CYCLOHEXANE	1.46		1.70		11.07	
2-METHYLHEXANE	5.90			0.72	204.96	12.02
2,3-DIMETHYLPENTANE					115.60	6.59
CYCLOHEXENE					2.65	
DIBROMOMETHANE						
3-METHYLHEXANE	5.19			0.90	160.63	2.95
1,2-DICHLOROPROPANE					204.76	
2,3-DICHLOROPROPANE	1.73				12.73	
TRICHLOROETHYLENE	1.36				15.19	
2,2,4-TRIMETHYLPENTANE				1.20	471.97	37.24
1-HEPTENE					11.01	
HEPTANE	4.08			0.81	89.81	1.59
1-CHLORO-3-METHYLBUTANE						

TRANS-2-HEPTENE				6.22	
METHYLCYCLOHEXANE	3.30			38.78	1.35
2,5-DIMETHYLHEXANE				93.35	9.23
4-METHYLCYCLOHEXENE				13.98	1.10
1-CHLOROPENTANE				9.04	
1,1,2-TRICHLOROETHANE					
TOLUENE	7.77	0.92	3.19	183.66	95.78
1,3-DICHLOROPROPANE					
2-METHYLHEPTANE	2.42			44.90	
1,2-DIBROMOETHANE					
1-OCTENE	1.38			24.67	1.97
TRANS1,2DIMETHYLCYLOHEXANE	0.72			10.23	1.09
TRANS-4-OCTENE					
TETRACHLOROETHYLENE				12.01	
OCTANE	3.58	0.62		68.09	1.98
2-METHYL-1-HEPTENE					
2-OCTENE				8.30	
CIS-1,2-DIMETHYLCYCLOHEXANE					3.25
CHLOROBENZENE					
PROPYLCYCLOPENTANE				6.24	2.66
ETHYLCYCLOHEXANE				22.33	5.23
1-CHLOROHEXANE					3.57
ETHYLBENZENE	2.25	1.45		49.56	10.41
M-XYLENE	5.10	0.67	1.21	231.47	37.40
STYRENE		2.12			
1,4-DICHLOROBUTANE					3.61
O-XYLENE				87.94	34.72
1,1,2,2-TETRACHLOROETHANE					
1,2,3-TRICHLOROPROPANE	2.56				
1-NONENE				14.79	20.38
NONANE		0.67		63.74	22.66
ISOPROPYLBENZENE				10.61	
2-CHLOROTOLUENE					56.95
3-CHLOROTOLUENE					
N-PROPYLBENZENE				38.35	8.18
4-CHLOROTOLUENE				71.32	64.69
3-ETHYLTOLUENE				70.26	19.74
4-ETHYLTOLUENE					12.38
1,3,5-TRIMETHYLBENZENE				10.41	48.98
2-ETHYLTOLUENE				36.98	8.94
T-BUTYLBENZENE				94.59	46.71
1,2,4-TRIMETHYLBENZENE				164.80	81.37
1,3-DICHLOROBENZENE				19.03	
1-DECENE				32.65	
A-CHLOROTOLUENE					
1,5-DICHLOROPENTANE					
DECANE				77.82	120.50
SEC.BUTYLBENZENE				4.17	4.49
3-(CHLOROMETHYL)-HEPTANE					
1,2,3-TRIMETHYLBENZENE				49.95	
1-ISOPROPYL-4-METHYLBENZENE				6.47	
1,2-DICHLOROBENZENE					
INDAN				24.10	11.43
N-BUTYLCYCLOHEXANE				9.68	15.25
1,3-DIETHYLBENZENE					
1,4-DIETHYLBENZENE					
N-BUTYLBENZENE					
1,2-DIETHYLBENZENE					
DECALIN					
UNDECANE				102.51	54.08
1,2,3,5-TETRAMETHYLBENZENE					4.18
DIISOPROPYLBENZENE					
1,2,3,4-TETRAMETHYLBENZENE					
TETRALIN					
DODECANE					25.24

Total hydrocarbons ug/m3:	130.65	42.25	18.44	29.82	4083.94	1034.02
Alkanes ug/m3	50.78	23.87	13.63	24.07	2339.96	390.07
Cycloalkanes ug/m3	7.68	1.94	2.52	0.47	132.20	30.19
Alkenes ug/m3	18.76	2.12	0.79	0.00	148.24	28.29
Cycloalkenes ug/m3	0.00	0.00	0.00	0.00	16.63	1.10
Alkynes ug/m3	0.00	0.00	0.00	0.00	0.00	0.00
Aromatics ug/m3	47.78	14.32	1.50	4.40	1102.83	455.55
Chlorinated alkanes ug/m3	2.56	0.00	0.00	0.88	213.80	7.18
Chlorinated alkenes ug/m3	3.09	0.00	0.00	0.00	39.93	0.00
Chlorinated aromatics ug/m3	0.00	0.00	0.00	0.00	90.35	121.64
Total # of compounds identified	31	14	9	15	63	52
Total # of peaks	115	39	16	30	181	140
Total area of peaks	21808.08	6507.16	897.23	3098.84	54933.26	36616.42
Area of identified peaks	5715.07	1918.00	696.65	1128.19	38153.44	17631.67
Area % identified peaks	26	29	78	36	69	48
Toluene:Ethylbenzene	3.45	0.63			3.71	9.20
Benzene:Ethylbenzene	14.52	6.32			0.80	2.96
Xylenes:Ethylbenzene	2.27	0.46			6.44	6.93
Ethylbenzene:Ethylbenzene	1.00	1.00			1.00	1.00

SAMPLE #	TIME(HR)	DATE	SAMPLING LOCATION
1	1235	June 25/84	Vidal St. - beside Union Carbide
2	1235	June 25/84	Vidal St. - beside Petrosar
3	1257	June 26/84	Methane vent - 30 metres north of van at Camlachie site
4	1304	June 26/84	Vidal St. & Imperial Rd.
5	1313	June 26/84	River Rd.downwind of Suncor
6	0937-1040	June 27/84	Huron Aviation Airplane Hanger

SARNIA OXIDANT STUDY - RETENTION INDEX LIBRARY BENCHMARKS

COMPOUND NAME	MINIMUM DETECTABLE AMOUNT (UG/M3)	STANDARD OR GUIDELINE 1/2HR AVERAGE (UG/M3)
PROPANE	.1	
PROPADIENE	.1	
PROPYNE	.1	
CHLOROMETHANE	.1	20000 (2)
CYCLOPROPANE	.1	
ISOBUTANE	.1	
VINYL CHLORIDE	.1	560 (2)
1-BUTENE	.1	
1,3-BUTADIENE	.1	
BUTANE	.1	
1-BUTYNE	.1	
CHLOROETHANE	.1	
3-METHYL-1-BUTENE	.1	
2-METHYLBUTANE	.1	
1-PENTENE	.1	
PENTANE	.1	
ISOPRENE	.1	
TRANS-2-PENTENE	.1	
DICHLOROMETHANE	.5	100000 (1)
2-METHYL-2-BUTENE	.1	
2-CHLORO-2-METHYLBUTANE	.1	
3-CHLOROPROPENE	.2	
2,2-DIMETHYLBUTANE	.1	
3-METHYL-1-PENTENE	.1	
2,3-DIMETHYLBUTANE	.1	
3-METHYLPENTANE	.1	
1-HEXENE	.1	
CIS-1,2-DICHLOROETHYLENE	.1	
2-CHLOROBUTANE	.2	
HEXANE	.1	35000 (2)
CHLOROFORM	.7	1500 (2)
TRANS-3-HEXENE	.1	
3-CHLORO-2-METHYLPROPENE	.1	
METYHYLCYCLOPENTANE	.1	
1,2-DICHLOROETHANE	.2	
1,1,1-TRICHLOROETHANE	.3	350000 (1)
1-CHLOROBUTANE	.1	
BENZENE	.1	10000 (1)
CARBON TETRACHLORIDE	.3	1500 (2)
CYCLOHEXANE	.1	300000 (2)
2-METHYLHEXANE	.2	
2,3-DIMETHYLPENTANE	.1	
CYCLOHEXENE	.1	
DIBROMOMETHANE	9 .7	
3-METHYLHEXANE	.2	
1,2-DICHLOROPROPANE	.2	
2,3-DICHLOROPROPENE	.2	
TRICHLOROETHYLENE	.1	85000 (1)
2,2,4-TRIMETHYLPENTANE	.1	
1-HEPTENE	.1	
HEPTANE	.1	
1-CHLORO-3-METHYLBUTANE	.1	

TRANS-2-HEPTENE	.1	
METHYLCYCLOHEXANE	.1	
2,5-DIMETHYLHEXANE	.2	
4-METHYLCYCLOHEXENE	.1	
1-CHLOROPENTANE	.1	
1,1,2-TRICHLOROETHANE	.3	
TOLUENE	.1	2000 (1)
1,3-DICHLOROPROPANE	.2	
2-METHYLHEPTANE	.1	
1,2-DIBROMOETHANE	.6	
1-OCTENE	.1	150000 (3)
TRANS1,2DIMETHYLCYLOHEXANE	.1	
TRANS-4-OCTENE	.1	
TETRACHLOROETHYLENE	.3	
OCTANE	.1	
2-METHYL-1-HEPTENE	.1	
2-OCTENE	.2	
CIS-1,2-DIMETHYLCYCLOHEXANE	.1	
CHLOROBENZENE	.1	
PROPYLCYCLOPENTANE	.1	
ETHYLCYCLOHEXANE	.1	
1-CHLOROHEXANE	.1	
ETHYLBENZENE	.1	4000 (1)
M-XYLENE+P-XYLENE	.1	2300 (4)
STYRENE	.2	400 (1)
1,4-DICHLOROBUTANE	.1	
O-XYLENE	.1	2300 (4)
1,1,2,2-TETRACHLOROETHANE	.8	
1,2,3-TRICHLOROPROPANE	.4	
1-NONENE	.2	
NONANE	.1	
ISOPROPYLBENZENE	.1	100 (3)
2-CHLOROTOLUENE	.2	
3-CHLOROTOLUENE	.2	
N-PROPYLBENZENE	.1	
4-CHLOROTOLUENE	.2	
3-ETHYLTOLUENE	.1	
4-ETHYLTOLUENE	.1	
1,3,5-TRIMETHYLBENZENE	.1	
2-ETHYLTOLUENE	.1	
T-BUTYLBENZENE	.1	
1,2,4-TRIMETHYLBENZENE	.1	100 (1)
1,3-DICHLOROBENZENE	.2	
1-DECENE	.4	180000 (3)
A-CHLOROTOLUENE	1 .3	
1,5-DICHLOROPENTANE	.1	
DECANE	.2	
SEC.BUTYLBENZENE	.1	
3-(CHLOROMETHYL)-HEPTANE	.1	
1,2,3-TRIMETHYLBENZENE	.1	
1-ISOPROPYL-4-METHYLBENZENE	.2	
1,2-DICHLOROBENZENE	.1	
INDAN	.2	
N-BUTYLCYCLOHEXANE	.1	
1,3-DIETHYLBENZENE	.1	
1,4-DIETHYLBENZENE	.1	
N-BUTYLBENZENE	.1	
1,2-DIETHYLBENZENE	.1	
DECALIN	.1	
UNDECANE	.2	
1,2,3,5-TETRAMETHYLBENZENE	.2	
DIISOPROPYLBENZENE	.2	
1,2,3,4-TETRAMETHYLBENZENE	.2	
TETRALIN	.2	
DODECANE	.4	

Notes: (1) Standard
(2) Guideline
(3) Provisional Guideline
(4) Provisional Guideline for sum of o-,m-,&p-xylene

Appendix A: Aircraft Hydrocarbon Sampler

OPERATION OF THE S.S. FLASK SAMPLING TRAINS - HYDROCARBON SAMPLING

1) Make sure the critical orifice is the proper one for the sampling time interval you want. i.e. insert

   38 um for 1 hour samples

   55 um for 30 minute samples

   78 um for 15 minute samples

2) Make sure all fittings are proper and the appropiate number of flasks are positioned with respect to the orifices.

3) Make sure the flask toggle valves are closed.

4) Open the pump and end-of-line toggle valves.

5) Turn on the pump (line switch). If the pump does not come on, check the 12 volt power supply switch (it has to be on) and the plugs.

6) After a couple of minutes, close the pump toggle valve. The pressure should go up to the range of 35 to 40 psig. If it doesn't, you have a leak - check the plumbing up to the critical orifices and check for pump damage or restrictions in your sampling line.

7) JUST BEFORE YOU WANT TO TAKE A SAMPLE:
   Close the end-of-line toggle valves.
   Open the appropiate flask valve and note flask pressure. It should read al least -25 psig...if it doesn't, you have a leak, the flask exhaust valve has been left open (you should never, never touch this valve)or the flask has not been properly conditioned ..... DON'T USE THIS FLASK!!!!!! go to another.

8) TAKING A SAMPLE
   Open the flask toggle valve and record pressure and time on flask tag

9) END OF SAMPLING
   Close flask toggle valve and note time
   Record flask pressure and then close flask valve. Be sure it is sealed.

10) YOU ARE NOW READY TO TAKE ANOTHER SAMPLE. START A STEP 7 and CONTINUE.....

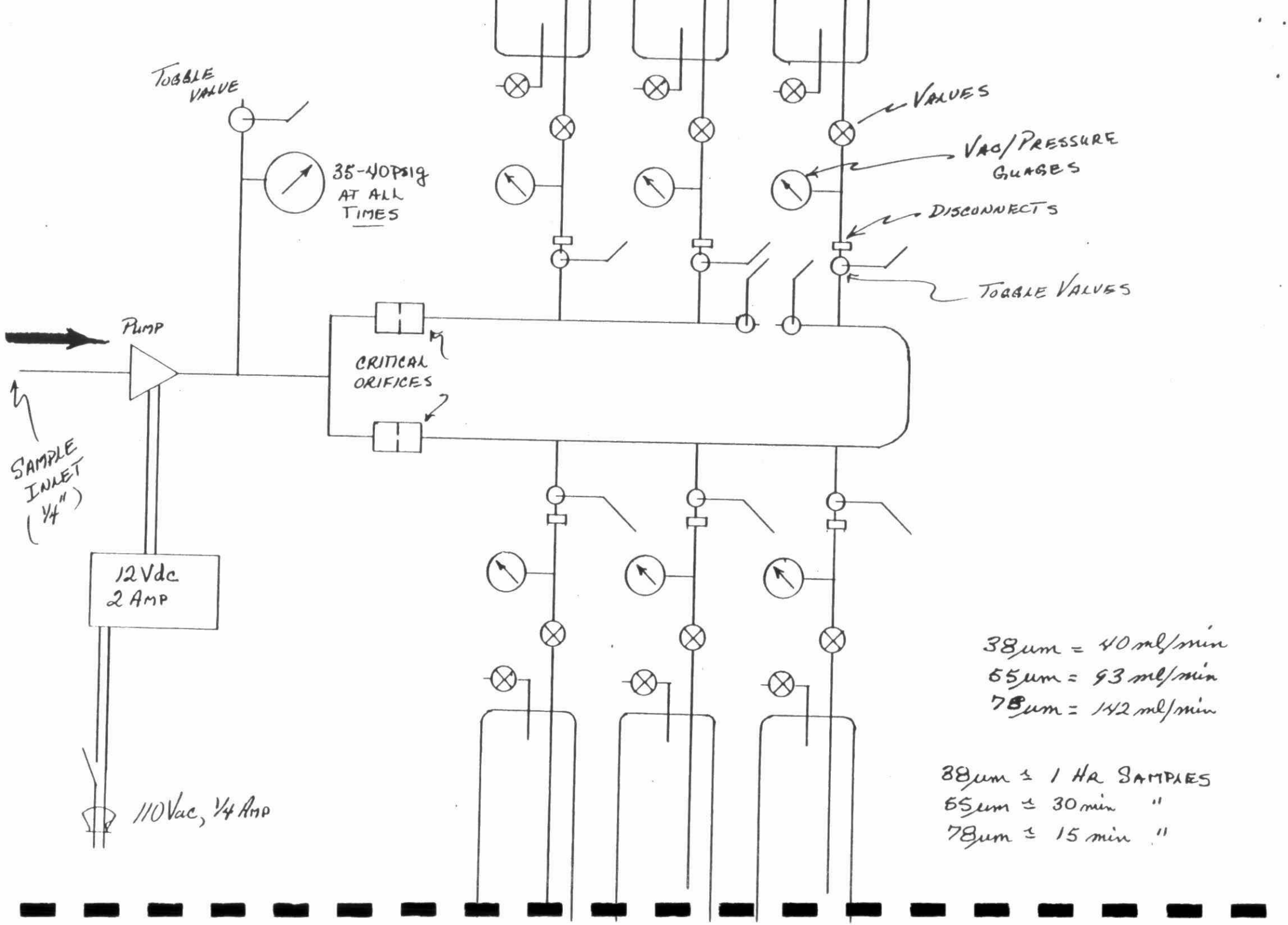
11) SOME NOTES::::

   YOU CAN ONLY TAKE ONE SAMPLE OFF EACH CRITICAL ORIFICE

   ENTER ALL DATA ON FLASK TAGS.. IDENTIFY THE SAMPLE

   DON'T WORRY ABOUT PRESSURES ON THE FLASK, THEY WILL VARY DEPENDING ON THE ORIFICE USED...BE SURE TO NOTE THE PRESSURES - START AND END.

   ALL FITTINGS MUST BE STAINLESS STEEL...NO BRASS OR COPPER!!!!


TOGGLE VALVE
35-40psig AT ALL TIMES
VALVES
VAC/PRESSURE GUAGES
DISCONNECTS
TOGGLE VALVES
PUMP
CRITICAL ORIFICES
SAMPLE INLET (1/4")
12Vdc 2 AMP
110Vac, 1/4 AMP
38μm = 40 ml/min
65μm = 93 ml/min
78μm = 142 ml/min
38μm ± 1 HR SAMPLES
65μm ± 30 min "
78μm ± 15 min "

TD
890
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